Illustrated ★ ★ ★
FOREST & OUTDOORS

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Dec 28

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1946
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Montreal, Canada.

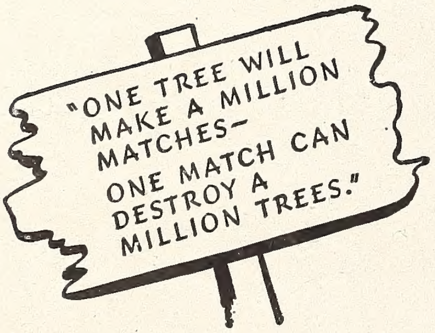
"Forest and Outdoors" Wishes All Readers A Joyful Christmas.

PUBLIC ENEMY NUMBER ONE

TO "THE FIRE WOLF" goes this dubious honour. To human carelessness go his thanks; thanks for the red-hot embers, the smouldering matches and the burning sparks of tobacco which have gone far to make "The Fire Wolf" the forests' Public Enemy Number One.

- Each forest fire makes you poorer—in wealth, national prestige and natural beauty.

- Stamp out your camp fires.
- Grind your matches to dust.
- Douse your embers.
- Get rid of "The Fire Wolf"!


"ONE TREE WILL MAKE A MILLION MATCHES— ONE MATCH CAN DESTROY A MILLION TREES."

TRANSPORTATION · CONSTRUCTION · ENGINEERING

The Shawinigan WATER & POWER CO.

ELECTRICAL POWER INDUSTRIAL CHEMICALS

SHAWINIGAN CHEMICALS LIMITED QUEBEC POWER COMPANY

associated and subsidiary companies

This is No. 17 of a series of advertisements on Forestry Conservation.

Young Canada turns winter into playtime

Photo Malak

Winter Wonderland

IN OLD QUÉBEC

Crisp tonic air … dry powder snow … skiing at its glorious best at Lac Beauport Snow Bowl and nearby Valcartier … skating and tobogganing, too. And you can spend fascinating hours just "seeing the sights" and exploring quaint shops for handicrafts and homespuns.

In the heart of this 17th century city, the historic Chateau Frontenac offers everything to make your stay complete. Gay social life, blazing log fires —relaxation in an old world atmosphere amid modern comforts. "It's a Canadian Pacific hotel."

For full information consult any Canadian Pacific Railway agent.

Canadian Pacific

SPANS THE WORLD

Ski Magic in the valleys of Banff National Park.

Canada's Empire of Parks Resounds TO WINTER SPORTS

On the summits of Mount Revelstoke, B.C.

CANADA'S national parks, which have long been among the greatest summer playgrounds on this continent, are fast developing into a mecca for thousands of visitors who are seeking pleasure in the winter time. Three of these parks, Banff and Jasper in Alberta, and Revelstoke in British Columbia are regarded as ideal playgrounds for both summer and winter games.

Banff National Park, the first established national park in Canada, is probably the centre of winter sports in the Canadian Rockies.

Low-country skiing, high-country skiing and ski-mountaineering are the three types of skiing popular in the Banff region. Low-country skiing may be enjoyed at an altitude of 5,000 ft. Beginners will find gentle slopes that may be negotiated with ease. High-country skiing, is possibly the most

Outlook for Forestry Inspires Confidence

A Statement To "Forest & Outdoors" by the Honourable J. Allison Glen, Minister of Mines and Resources

NOT at any time in the history of this country has the outlook for the rational management of our forests seemed more promising than it does now. Among Canadians generally there appears to be a growing conviction of the value of resources management and this is being reflected in the increasing agreement among both provincial governments and forest industries that planned handling of our forests is essential for the future productivity of this great resource.

During the war years overcutting in provincially-owned forests was necessary to meet emergency needs. A further drain must be made on these resources to supply the domestic market and to meet world-wide requirements for lumber, pulp and paper, and other forest products. This situation has apparently impressed itself on our provincial governments, and Royal Commissions have been appointed by three of them to investigate and report on their respective forest resources. The Commission set up in British Columbia reported a pressing need for scientific forest management along lines long advocated by professional foresters. This report created intense interest among lumbermen and the public in general on the Pacific Coast. The Government of Saskatchewan named its Royal Commission in 1944 and this year Ontario took similar action. Both of these bodies are still engaged on their task.

By the employment of increased numbers of trained foresters to conduct woods operations and by taking steps to complete inventories of their holdings, forest industries are indicating their conviction of the merits of planned utilization.

The Dominion Forest Service has for years been cooperating with the provinces and with industry in sustained yield studies. It has been gathering and making available to forest interests, basic information on the rate of which our forests are growing and reproducing. During the past year appropriations of this service were substantially increased to meet the growing need for data of these kinds.

The movement for a wider use of scientific methods in the handling of Canada's timberlands is definitely progressing and I feel that we can look with confidence to a healthier national situation in the not too distant future in respect to our forest resources.

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interesting feature of this sport in the Rockies.

Three developed high-country skiing areas are located at Mount Assiniboine, "Sunshine" district and in the Skoki Valley. Mount Assiniboine is about thirty miles south of Banff. Sunshine district, is fifteen miles southwest of Banff, and Skoki Valley ten miles north of Lake Louise. All are approximately 7,000 ft. above sea level.

Not much timber grows at 7,000 ft. and ski enthusiasts are assured of rolling, open country and varied mountain scenery. At Mount Assiniboine there are many runs in the neighbourhood of 3,000 vertical feet. Well equipped ski cabins are established and provide many modern conveniences.

The Sunshine district is often referred to by skiers as "A little bit of Heaven". Perched almost at the top of the Great Divide 7,800 feet above sea level, is Sunshine Chalet. Here, mile after mile, as far as the eye can see, is a world of unbroken whiteness. A snowmobile transports skiers to within three miles of the lodge. Sunshine offers excellent skiing to the beginner and the expert alike. Nursery slopes graduate into an unlimited expanse of wide open hills providing downhill runs miles in length, all converging at the chalet door.

A modern highway enables members of the skiing fraternity to motor to Lake Louise Ski Lodge. Skoki Valley, to the north, has been developed into a fine skiing centre. At one time it was necessary to ski many miles before getting into the area, but in 1939 horse-drawn sleigh transportation was inaugurated and still more recently a tractor service was started. This service commences at Lake Louise Ski Lodge and runs to Temple Chalet. That leaves the visitor only five or six miles to ski into Skoki Chalet. Ambitious skiers may climb to the crest of Drummond Glacier or to the two peaks of Mount Drummond and enjoy runs of 4,000 vertical feet in a distance of six to eight miles.

Last and possibly the most spectacular of all three types of skiing in the Canadian Rockies is ski-mountaineering. This type of skiing is usually reserved for experts who combine nerve with skill in Alpine heights. It is possible too for an average skier to enjoy thrills in the sub-stratosphere

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Downhill ski-ing on Frazer Glacier, Jasper National Park.

The winter's first snowfall in Algonquin Park. Photo by R. W. Harrington.

The SNOWSHOE – Boon To Wilderness Travel

by PHIL SHACKLETON

TO THE youth of today, captivated by the potentialities of a pair of skis as winter sports equipment, the snowshoe is, in contrast, a crude outdated device. Showshoes, they will point out, are slow and clumsy, something to be used for travel by the bushman when the snow is too deep to support skis.

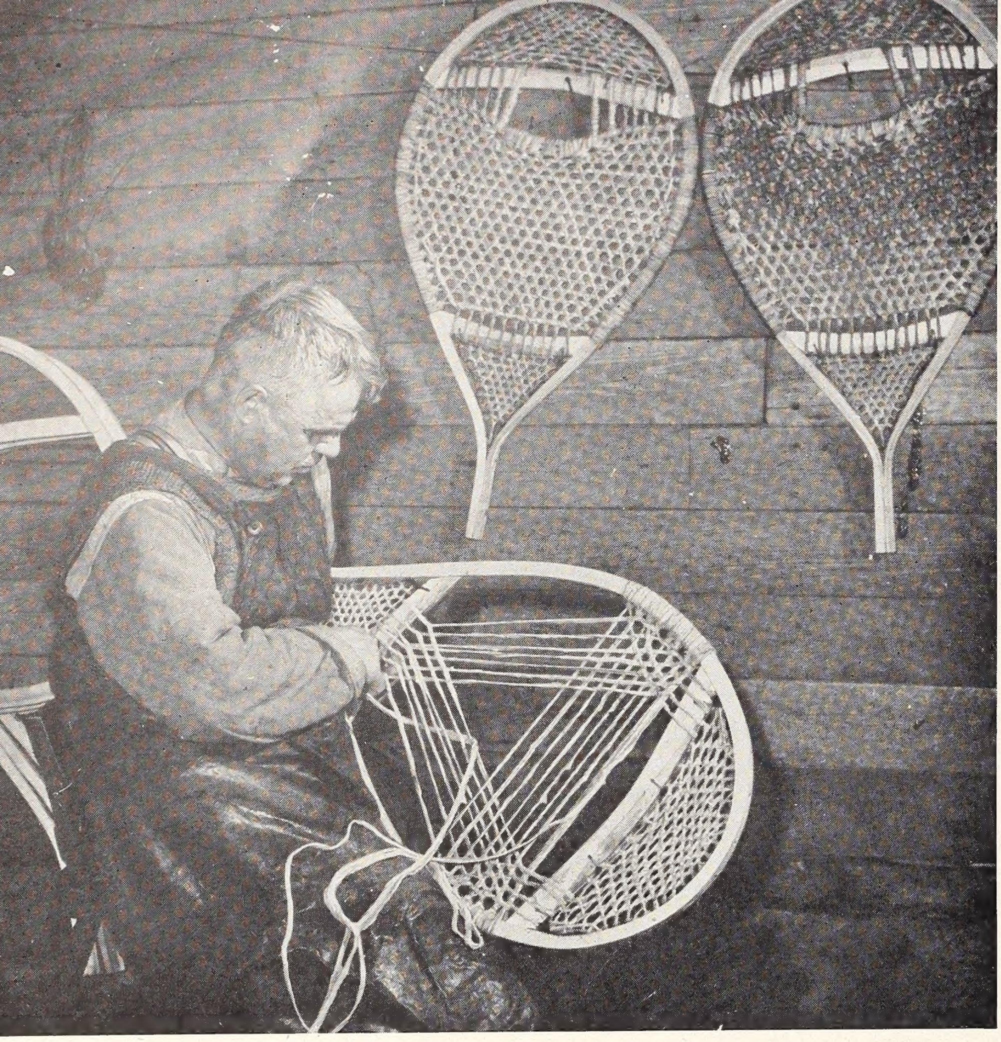
Yes, they are old. Snowshoes have been known in a variety of forms for many centuries. Distinctly a North American design, they were and are used by the Eskimos and by almost every Indian tribe living in snow country. They are as Canadian as lacrosse and maple syrup.

But to the enthusiast, they need not be a slow means of locomotion. Records from snowshoe competitions held by Montreal and Quebec clubs prove that an expert can cover ground in a hurry. Over a course of 100 yards, he can all but match top flight track sprinters. A mile has been covered in four and a quarter minutes, five miles in 31 minutes. Gérard Côté, the marathon runner from St. Hyacinthe, Quebec, holds the world's record of 63 minutes for the ten-mile distance.

The snowshoe remains, however, less a piece of sporting equipment than a priceless aid to travel for trappers and other men who spend their winters in the bush. Here, travelling by ski is hazardous, and only the snowshoe makes any travel through deep snow possible.

The snowshoe frame is made of a single piece of tough wood like hickory, which is curved until the ends can be fastened together. One or two light cross pieces are fitted within, and then strips of hide, traditionally

Snowshoes in northern Manitoba trappers' camp stand ready for use at first deep snowfall. The snowshoe is a bush trappers' one sure means of transportation.



Joseph Verret, Valcartier, Quebec, snowshoe maker laces the frame with raw cowhide. The room in which he works is kept warm and humid so the hide will work easily.

National Film Bd. photo

caribou, are woven to form a close network filling the frame. Leather thongs or buckles fasten the snowshoe to the foot.

Fashions in snowshoes vary with locale and range from circular "bear paw" styles to the long, narrow trackers' design. The Eskimos build two types, one triangular and only 18 inches long, the other circular. Both are slow but provide good support on deep snow. The Indians' snowshoes are generally longer and narrower. For the use while hunting, the Crees make one type six feet long, with toe or point turned up. These long narrow snowshoes allow greater speed and the hunter can overtake hooved animals which have great trouble running in the snow. Some Indians at one time produced highly ornamented snowshoes for use as love tokens.

As any who have tried snowshoes will know, there is a trick to using them. The novice will spread his legs to keep the snowshoes from scraping each other, but this awkward position, like attempting too great a distance before conditioning oneself to the strain, will cause lameness. Such invalids, the old voyageur type would say, suffer from "mal de raquette".

Since only the toe of the foot is secured to the snowshoe, the wearer can adopt a walking style of gait. The foot is raised only high enough to carry one snowshoe over the other, the inner edges alternately overlapping one another as they pass. The expert can be recognized by the swinging outward motion which enables him to travel at a fair speed with little fatigue over long distances.

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FISHERMEN AND FORESTERS UNITE FOR CONSERVATION

by ALAN N. LONGSTAFF

SPORTSMEN — fishermen and hunters — and forest operators, have a joint stake in the welfare of Canada's woods and waters and their inhabitants.

This was made evident at a conference of some 250 representatives of fish and game associations and clubs, from all parts of the Province of Quebec, held at the Chateau Frontenac, in Quebec City, on November 10th, 11th and 12th.

That conference, which culminated many years of effort by conservation-minded sportsmen, resulted in organizing the Quebec Federation of Fish and Game Associations, which will represent about 30 fish and game associations and more than 700 organized fish and game clubs.

Joint chairmen of a committee which evolved an ambitious 1947 programme of the Federation, were Bernard Castonguay, President of the Casting Club of Quebec, and Vernon Johnson, Chairman of the Board of the Canadian Forestry Association, whose work was highly commended by every delegate.

The deliberations of this and other committees were followed with keen interest by Hon. C. E. Pouliot, Minister of Game and Fisheries for the Province who, with L. A. Richard, Deputy Minister, and Charles Fremont, K.C. General Superintendent, sat in at all of the three-day sessions; answered questions and, at times, explained the financial and other problems under which the Department operates in administering these resources.

The Minister assured all present that his Department not only approved, but welcomed this first real effort of sportsmen to band themselves together, and to help in finding the solution to the many problems which confront the wild life of the province, and the forests and waters inhabited by a wide variety of animals, birds and fish.

While delegates from such widely scattered territories might have been expected to attend such a gathering with local problems uppermost in their minds, these were overlooked, and unanimous support was given to a programme carefully drawn up to deal with fish and game and forest conservation on a province-wide basis.

Among the recommendations un-

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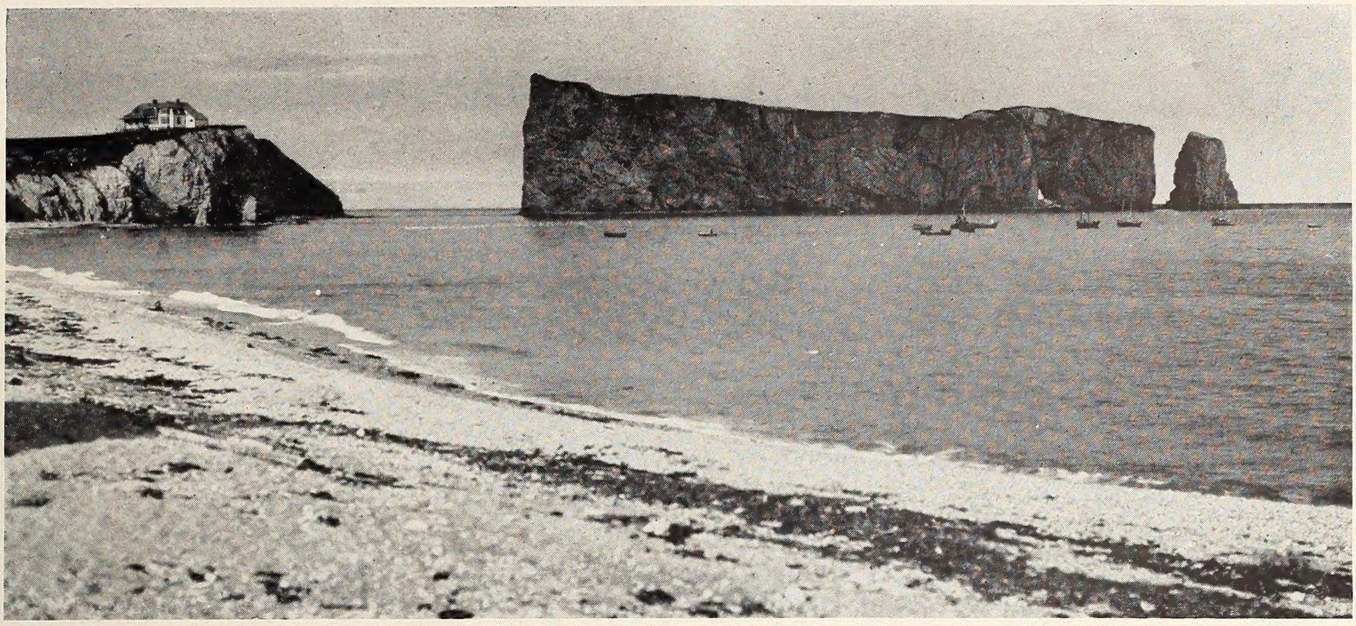


The famous Percé Rock on the Gaspé coast.

Sculptured by A Giant's Chisel

by JACK HOLMES

THROUGH countless ages, Nature has carved strange shapes in rock. Constant wear by tide and running water, the beat of wind and rain, the grind of glacial masses and sudden volcanic violence, all have played their part in natural rock sculpture. In seaside cliffs and along inland waterways, in mountain and valley and underground in mysterious caverns, Canada boasts startling examples of these fantastic rock formations.

When viewed from the proper perspective some great hills and mountains, or certain of their peaks and faces, take on striking resemblance to familiar objects. One need only mention the lions of Vancouver's Capilano Canyon, the Sleeping Giant of Thunder Bay, and the Rockies' reproduction of a medieval stronghold, Castle Mountain, now renamed Eisenhower.

Cliffside caves and individual rock pillars offer somewhat smaller but often more remarkable artistry. The tide plays a great part in seaside sculpture and so it follows that the Bay of Fundy, with its tremendous ebb and flow, is a treasure house of such wonders.

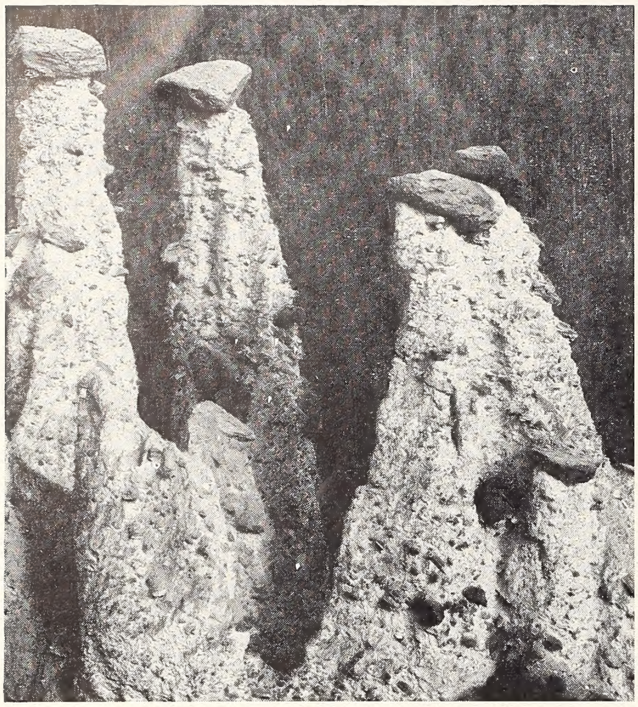
Hopewell Cape on the New Brunswick shore has many fantastic caves worn into its reddish cliffs. These ramparts, forty to eighty feet heigh, have been twisted, arched and modelled into a most striking collection of rock forms. Overhanging crags find support from columns which in some manner have withstood the unceasing assault of tide, wind and wave.

The Little Giant and the Sphinx are detached shapes which have been sculptured cunningly by the elements. The former, a pillar fifty feet high, is poised on a slender stem and stunted trees grow in the cracks of the rocky surface on the sheltered side. The squat Sphinx also overhangs its narrow pediment and bears a resemblance, somewhat remote in truth, to its Egyptian namesake.

Far away on the Pacific Coast, another example of a detached pillar of this type comes to mind in the Siwash Rock of Vancouver's Stanley Park. It has won renown through the words of Pauline Johnson, who tells the legend of the Siwash brave immortalized in this rocky monument to clean fatherhood.

The "Flowerpots" of Georgian Bay also have a place in the folklore of the Red Men, and are associated with a race of giants said to have inhabited the island now famed for its top-heavy rock pillars. The Indians also avoided the vicinity of the Hoodoos of Yoho National Park, B.C., and indeed there is something a bit weird about those eroded spires of stone, each capped by a boulder-like mass of harder substance which seems to balance precariously upon a lofty finger.

One of the "flowerpots" on Flowerpot Island, Georgian Bay National Park.



The "Hoodoos" in Yoho National Park, B.C.

An unusually massive example of the archways sometimes found in jutting seaside crags is the storied, pierced rock of the Gaspé coast. Resembling a colossal ship in its general shape, Percé towers 288 feet at the prow-like landward end and reaches more than a quarter of a mile seaward. The archway, through which a schooner with 30-foot mast could sail, was a mere 12-inch crack 75 years ago. In 1675 Percé had three archways, and a column beyond the sea end of the main rock still marks the place where one of them collapsed many years ago. Meanwhile other holes appear to be in the making as masses of rock fall annually, revealing fossils of great scientific interest.

Rock sculpture as marvellous as that of the seacoast may be found underground in many well known systems of caverns. An outstanding Canadian example is in Glacier National Park, in the heart of the majestic Selkirks. Couger Creek, descending a precipitous valley, suddenly disappears into the rocky bank. A few hundred feet further on it reappears, flows for a while in the light of day, then plunges into subterranean darkness. After a third reappearance the stream stays hidden for the rest of its course.

So are formed the caves called Nakimu, a series of lofty chambers connected at various levels by narrow passageways in which the stream runs in almost total darkness except for artificial light. Rock sculpture of startling forms and shapes, formed through unknown milleniums of erosion, suggest such names for the chambers as the White Grotto, the Witches' Ballroom and the Judgment Hall. A thrilling experience indeed is a tour of such a series of caves as this, where Nature has hidden some of her most fantastic artistry.

Odd Things in Nature

by Donald Whitacre

THE CANDLEFISH

IN THE far north, as we know that region near the north Pacific, the need for a suitable means of light and heat is great and, although many different types of illuminating oils are used, the easiest for the natives to secure is the little fish which is appropriately called the candlefish.

By using the smeltlike candlefish, which inhabits the waters off the coast of northern America, the Eskimo is able to have both heat and light.

The fish is so oily, or rather so full of fatty tissues that it will burn and give off light. A wick is run through the body of the fish and one end lighted with flints or nowadays with matches.

One reason that this fish is so full of oil is the fact that it has an over abundance of the natural secretions which every fish possesses. Fish have glands which produce an oily film over their entire body and so reduce the friction with water.

ANIMAL TOOLS AND WEAPONS

Mother nature has endowed her lower beings with certain abilities which help to preserve the species and so keep a remarkably large number on this earth.

Wasps have an unusual ability in the fact that they are capable of using tools, and because of their creation of paper which is used in making their nests.

Also in the category of creatures able to use and make rude tools are the tailor or spinner ants. With tools designed from sticks and bits of stone, these ants make and use tunnels and living quarters.

Perhaps the most remarkable animal in the world, from the standpoint of using weapons, is the baboon. This animal not only fashions crude weapons from limbs of trees but even uses round stones for throwing.

When aroused or made angry, the baboon will grab a stout stick, or pick up a stone and with these will take its part in any fight.

THE DEEP SLUMBER OF DEATH

Almost all, or perhaps all creatures on this earth have mortal enemies.

Thus it is that the Cicada has a mortal enemy in the wasp. One species, known as the sphecoid wasp, lays eggs on the cicada and lets the young wasps live off the juices of the cicada.

When the cicada gives forth with its song, the wasp flies to it and paralyzes it with its stinger. Then the cicada is transported to the burrow of the wasp and eggs laid on the cicada. When the young wasps hatch they eat the juices from the body of the paralyzed cicada.

If the cicadas only knew what is in store for them whenever they sing perhaps they would 'keep their songs to themselves'.

THE TRUE FEMALE DEER

One of the beliefs common to most people is that all deer have horns of some sort. This is not true. The male deer is the only one of its species to have horns.

The elk deer, of North America, Europe, and Asia, is, perhaps, the largest of all true deers and it will be found that only the males or bucks have horns. These horns are shed each year and new ones grow in their place. With these horns the males fight for the right to mate with the females.

However, there are certain species of animals where both male and female do have horns. Among these are the reindeer and the large caribou.

THE WOMBAT, AUSTRALIA'S BEAVER

by E. V. E. NEILL

Pictures by Jack Gallagher

ORIGINALLY described from fossil remains before it was known to exist as a living creature, the wombat ranges widely over the more coastal regions of south-eastern Australia in hilly or mountainous country.

In its wild state it would appear to be the original "grumpy" of the marsupial family. But in captivity when once its confidence is won it reveals a very affectionate disposition and it becomes remarkably playful and amusing, especially with children.

With a maximum head and body length of about three feet nine inches and a maximum weight of about 80 lbs., the wombat has a fairly long but coarse coat which is variable in colour ranging from yellow-buff to almost black, usually in a grizzling of buff and blackish.

Excepting for lack of tail wombats are beaver-like in appearance and dentition. They differ from all the living marsupials in having only a single pair of upper and lower incisors. All the teeth are rootless, and grow continually.

Stout, well clawed limbs make the wombat an expert burrower, the chisel-like front teeth assisting in gnawing through obstructions, such as roots.

The wombat is said to dig with its fore feet while lying on its side. Their burrows have measured up to 100 feet. long. A few yards from an occupied burrow there is usually a shallow excavation against a tree or fallen log for the animal to rest and sun-bathe.

Diet consists of grasses, inner bark of certain trees, shrub roots and occasional fungi.

The breeding season extends from about April to June — a single one being born and carried in the pouch until about December, when it is fully furred. Wombats are harmless animals. A hoarse, growling cough, is the wombat's only call.

Australia's Wombat.

* * *

The Wombat enjoys a slice of bread.

A de luxe auto court and hotel for tourists, on Gorge Road, about 16 blocks from the centre of Victoria, B.C.

REGISTERED TRAPLINES FOR CHURCHILL

by LYN HARRINGTON

Photographs by Richard Harrington

THE introduction of registered traplines in northern Manitoba introduces a new element into the taking of fur in that province. Aware of the increasing value of the fur crop, Manitoba has taken precautions to maintain it, by setting aside fur preserves, rehabilitating some of the marshes, by increased fur framing and the introduction of registered traplines.

In July, the Churchill Trappers' Association voted overwhelmingly for registered traplines. They had seen how well the system worked in districts farther south, and were convinced of its benefits.

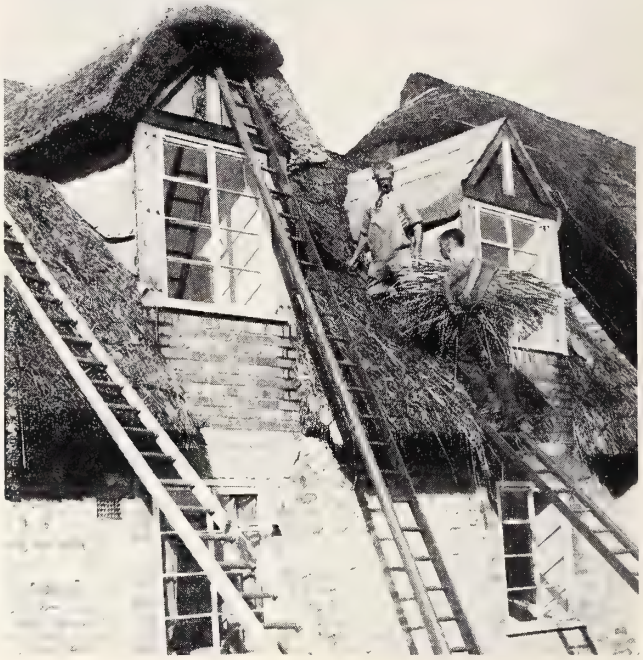
The registered trapline means that the territory in which the trapper previously worked under pressure of competition, is now his to "wild-fur farm" to the best advantage. By placing dams across streams, he encourages the beaver to settle down in the locality. Or he may import "nuisance" beaver from the Games and Fisheries Department of the government to stock his territory.

For bringing about the return and multiplying of the beaver, the trapper assures the increase of other animals in the neighbourhood. It is a well-known fact that where the beaver thrive, other fur-bearers do also. The trapper may by his own efforts increase his catch. He may encourage other animals by seeing that there is proper food for them. By creating swamps beloved of the muskrat, where frogs multiply in the boggy areas and aquatic plants grow readily, by throwing rough fish out on the banks of streams to lure the fox and other fur-bearers, he can build up the resources of his trapline. By persuading the animals to den up on his lands, the trapper can make reasonably certain of pelts the following winter.

Having control over his own traplines, without the menace of intruders and with the law to back him up, if such do thrust a way in, the trapper will be able to take the pelts when prime, instead of being hurried into it, in order to get ahead of someone else, when the trapline was his merely by the courtesy of other trappers.

Just as the idea has spread northward to Churchill, it will extend into the territories as yet unorganized. As yet some of the Indian trappers prefer to trap on a community basis, which they find satisfactory. But the Churchill trappers, a mixture of nationalities, find the registered trapline highly to their liking.

Churchill trappers outline their trapping territory with Harold Wells, Manitoba supervisor of registered traplines.



How the thatch is laid on an English house.

* * *

An English thatching job requires specialized skill.

Making A Thatched Roof

THATCH, most primitive and ancient form of roof, is lending what aid it can in Britain's latest and most immediate problem — providing homes after the war. Here an old barn is being converted into a house. New dormers have been made, to let in light and air to what was previously a mere farm building, and these dormers are being roofed most picturesquely by an expert thatcher.

December in the Quebec contryside.

Photo by Mr. & Mrs. Raymond Caron

Bare Branches

by WINIFRED E. WILSON

AFTER all, it is the main structure of most things that counts. As has been said, the girl with a good carriage can get away with it. She may wear almost anything. Now, that is just the way I feel about the trees. Beautiful as they are in their lovely, green, summer dresses, I am still conscious of the hidden forms — the skeletons, if you will. And so when autumn comes, though I am loath to see the gorgeous reds and yellows vanish, yet I look forward with pleasure to some months of bare branches. How I should hate to live in a land where there is no change !

Do you know the trees by their shapes ? Have you ever noticed the trees on your street, in your own garden ? We pay so little heed to them, yet how we should miss them if they had to go. Perhaps your nearest neighbour is an elm, that favourite city tree. The tall, straight trunk lifts itself high above the houses, large branches extending from its sides at angles of 25 to 35 degrees. The whole affair is shaped like a huge, old-fashioned umbrella with a long handle, the small branches and twigs drooping downwards. A street with a row of elms on either side is a joy to walk on. See how the boughs meet over the middle of the road, forming a perfect Norman arch.

The stately Lombardy poplar is frequenly used to fence in a large property. Is there a row of poplars dividing your church from the city hall ? The trunks are perfectly straight, and multitudes of small branches

The white glory of a December morning in Ontario's northland.

grow out on all sides, from top to bottom, each one doing its best to get into a perpendicular position as soon as possible.

See the old willow beside the stream. What could be more graceful, even though the gnarled trunk shows the ravages of time? If the elm resembles an umbrella of a past generation, the willow is more like a very modern one with an extremely short handle. It stands there inviting the cattle to gather under it as a protection from the heavy rain or the hot sun.

Is your pet tree the maple in your own backyard? Neither as stiff and cold as the poplar nor as sad and picturesque as the willow, it has won the hearts of many. Its branches may not be as flowing as those of the elm, but they grow at a perky angle. The maple is a happy tree, even though its shape is too symmetrical to be artistic.

No, we need not go into the deep woods to see trees: all large cities have their parks, and the smaller ones their avenues lined with trees. Here, planted at long intervals, they are not cramped like their brothers in the forests, all of which grow tall and thin. They have room to spread and show their true structure.

But shape is not the only beauty to be had from bare branches. When the brilliant tones of October are over there is yet plenty of colour, — if we but look for it. The various species of tree dress in different shades of brown: the bark of some oaks is nearly black, that of the wild cherry is a reddish brown, while the sugar maple is distinctly grey. The colours of the small branches also vary considerably. Seen from a distance in winter when they are absolutely stark, the tops of some trees show up positively red, others a real orange. Then, when the boughs are draped with fresh snow it seems as though the fairies had been at work to make our world a thing of beauty.

Unfortunately, the most strikingly lovely sight, almost breath-taking warns of trouble ahead for our trees. After an ice-storm, when every bough and twig is coated with a sparkling silver film, the sun comes out and we are in a land of wonder. If only a thaw comes before a big wind breaks off the crackling branches, all is well.

A few yards from the window of my room stands an elm which towers above the roof-tops. All that I can see of it from my bed is a cascade of tiny branches that seem to hang in mid-air. On a fine winter day, when the rising sun strikes this veritable curtain, I wish I were a great artist that I might paint a great picture of my little view — not solely for the joy of creation, but that I might show everyone this wonderful sight. Every twig is tinged with gold and pale rose, with bright spots here and there that shine like diamonds, all seen against a shimmering blue background.

Throughout the winter buds are forming. When some warm spring days arrive they begin to push their way into the open, and we find that our friends the trees are decorated with quantities of gay orange, red, yellow or green tips. Then we are happy in the knowledge that summer is "just around the corner".

The Truth About Those Starlings!

by Dan McCowan

A RECENT new-comer to the farm lands of western Canada is the European starling, a bird which, slowly but surely is spreading over a great area of this Dominion. A flock of eighty of these birds brought from overseas to New York city some fifty years ago to help in checking a plague of insects infesting trees in metropolitan parks gradually increased in numbers and eventually scattered throughout all parts of the State. From thence the descendants of the immigrant group found their way to Ontario and to the Maritime Provinces, the first record of the starling in Canada being made at Halifax in 1915. Now in many eastern cities starlings have so multiplied as to prove a nuisance to mankind and a menace to many forms of native bird life.

Within the past decade the starling has become well established in many parts of Manitoba and Saskatchewan. Last year the advance guard of this feathered legion had reached Calgary and Edmonton and soon the bronzed birds will be as common around prairie farm steadings as is the alien house sparrow today.

In general appearance the starling resembles the familiar cowbird but with more brilliant metallic green in the plumage and with a sprinkling of small creamy-white spots on some of the feathers. The feet and legs are reddish in colour and the strong stout bill is bright yellow in spring and summer and dark brown in winter. Young birds are clad in olive brown with some buff coloured feathers on the throat.

Starlings in flight travel with very rapid wing beat and seldom glide save when landing. Often the course is erratic, the birds appearing like pieces of burnt paper blown about by the wind. On the ground they move restlessly and, like the blackbirds, prefer walking to

(Continued on page 406)

Winter closes in — A scene at Lake La Vielle, Algonquin Park, Ont. by R. W. Harrington

How Dwarf Trees Are Cultivated

An informational nature department conducted by Norman G. Rogers

SOME time ago I was engaged upon the subject of the factors which influenced the growth of trees. I came across some material on the preparation of miniature trees, that is, real live trees but dwarfed purposely. Some of our common fruit trees make the best subjects, such as the cherry, apple, plum and peach, while among the other families, the ash and lilac will also respond to treatment.

In general there seems to be two possible results: first, the tree is a dwarf but the leaves and fruit are the same size as on a normal tree; second, the stem, twigs and leaves are all dwarfed such as the Japanese dwarf trees. To produce a tree in the first group, seedlings should be taken that have been growing in the normal way but are still quite young. Then the tap-root should be cut off and the tree planted in a pot half-filled with sand over which rich mould is placed to fill up the pot. It should then be buried in the ground and left until the spring when the buds begin to open. The end of October is the best time for potting but if this is not possible then the seedlings can be potted in the spring and placed in the greenhouse or window of the dwelling-house. In any case the potted tree is placed in the greenhouse in the spring. Soft water should be given from time to time but only in small amounts — remember that the object is to prevent growth. If the tree begins to shrivel up, then it will have to be transferred to a larger pot but only after being severely pruned. Transferring should only be done if absolutely necessary when the roots can be profitably thinned at the same time. By judicious pruning and by keeping the tree in a cold room it is possible to delay the flowering until wanted, when, by adding some fertilizer in solution and bringing the plant into a warm room the flowering will proceed rapidly. Such trees will be from about a foot to three or four feet high and, when the fruit is fully grown, will make a very attractive ornament for the table.

The real dwarf trees are grown in a somewhat similar manner. The seedlings are potted in a small pot and the buds are nipped or pinched off between April and June to prevent growth. During the summer sufficient water is given to keep the soil moist but during the winter very little water is supplied. Instead, the soil is covered with moss to prevent evaporation. Fertilizer should be added in the spring and autumn. The tree is repotted every third or fourth year but is not placed in a larger pot unless absolutely necessary. While the change is being made about one-third of the old soil is removed from between the roots and replaced with new. Such a tree will be an exact miniature of the full-sized tree in every respect and will attract much attention.

HOW FAST DO TREES GROW?

A short time ago the height of trees was discussed on this page but only in reference to the tallest. Since then I have been questioned as to the relative rates of growth of the different species. The rate of growth can be summed up in a general statement as follows: plants with stems similar to a corn stem, such as the bamboo, will grow very quickly, while trees such as the conifers and hardwoods will grow slowly. The rate of growth of bamboo is truly remarkable, a plant kept in the Jardin des Plantes at Paris being measured carefully showed a daily average growth of five and four-fifths inches. This would mean that the plant was increasing its height at about the same rate as the movement of the hour hand of a watch with a dial about an inch across. A table of rate of growth is herewith appended, being taken from the Government Bulletin "Tree-Planting on the Prairies"

SPECIES	Height at 5 years	Height at 20 years
Russian Poplar	12′ 6″	47′ 0″
Paper Birch	8 5	28 0
Manitoba Maple	8 0	27 8
Tamarack	5 8	28 0
Green Ash	4 8	22 6
Siberian Larch	4 6	31 9
White Elm	4 6	19 2
Jack Pine	2 0	21 2
White Spruce	1 6	16 4
Scotch Pine	1 5	22 6
Lodgepole Pine	1 0	20 1

These figures are the averages of the heights of hundreds of trees of each kind growing under good conditions. It will be apparent from the above table that some species grow quickly in their youth and then slow up while others which have started very slowly soon overtake and pass them.

In connection with the growth of a tree it is interesting to consider the bark. The true bark does not really grow at all but is like the epidermis on our own bodies. It is added to from the inside while the dead outside layers split apart and fissure from the steadily increasing diameter of the trunk and gradually flakes off and decays. The thickness of the bark does not, therefore, bear a constant relationship to the age of the tree.

Next month the earliest trees to appear on the earth and their location will be discussed.

Making New Forests for Britain

by J. D. U. WARD

Filling the transplant boards.

Transplanting time in one of the British forest nurseries. The planting board arranges the little trees in even rows.

IN BRITAIN the postwar programme of the Forestry Commission is now well under way. Winter is both transplanting and planting time. Planting is the term used for putting out young trees (which will almost certainly be transplants, aged from two to four years) in the forests. But before the trees reach that stage, they have already been moved once, in the forest nursery, to improve their root systems. When barely a year old, seedlings are lifted from the beds in which the seed was originally sown, and they are then transplanted with the help of special boards, as shewn here: in many nurseries the work of board-filling is done by women, girls and boys. The young trees will spend from one to two years in the transplant lines, before they are again lifted and put out in the forests at a density of about 2,000 per acre.

THE OCTOPUS — A MENACE

Mother nature seems to be wasteful in some of her exploits while extremely close in others.

The octopus comes from one of the more wasteful forces, as there are over forty thousand octopi eggs for every octopus that lives to be over ten feet across.

When an octopus hatches it is usually quite small, about the size of a pigeon egg. However, if allowed to grow to maturity it will often exceed twenty feet in length of its arms or tentacles.

The large octopi are found at a depth of fifty feet and more and when divers go below these depths, especially near reefs or rocky ledges, they are taking a chance on running into them. However, octopi dislike the feel of a divers helmet and if, by chance, they happen to grasp this first they usually leave the diver alone.

HOW TREES SPEND THE WINTER

By John Harvey Furbay, Ph.D.

HAVE you ever looked upon the barren form of a favorite tree when it was covered with ice and snow, and as you gazed at it, wondered what was going on in the tree? Have you wondered whether or not trees are really alive in winter?

During the winter, a tree can manufacture no food for itself, if it has no leaves. Trees which lose their leaves in the fall are called 'deciduous trees' and those which retain them are called 'evergreen trees'. It is doubtful if the evergreens manufacture very much food in the winter, and the deciduous trees make none. It is necessary that they draw upon the supplies which were laid away during the summer months, just as the farmer drawns upon his summer's crops for winter feeding.

Every living cell is at all times consuming food, breathing, and giving off waste. Trees store their food during the summer in their stems, limbs, trunks, and roots. It is carried about in the sap. Oxygen is constantly absorbed by the tree, and carbon dioxide is given off. This 'breathing' results in the liveration of some heat, although not very much. In the spring the tree must draw further on its reserve food supply to open its buds and put out its new leaves. It is in the new leaves that food is again manufactured.

I have often been asked: "Do trees grow in winter?". No. Their growing periods usually are the same as the periods when the leaves are green. In winter they rest and live economically on what they have laid away, waiting for the return of spring to continue their growth. It is in this way that the 'growth rings' are formed, and when a tree is cut, these rings show the periods of growth and of rest which the tree has lived through.

The buds are inactive during the winter. Most of them were formed before the leaves were shed in the fall. They are protected now by cork-like scales, sometimes covered with a wax secreted by the tree. In this way they pass the cold days in snug comfort, resting till the warm days shall lure them to burst from their little houses and spring out as new green leaves.

The roots continue to absorb water unless the ground is frozen all about them. However, they usually have many roots which go down far below the frost line, and are always able to search for water. Since the whole tree is very inactive, it requires very little water compared with the active summer months. The tree is constantly losing eater by evaporation, and if the roots are not able to secure as much water as is evaporated from the limbs and twigs, death is likely to result. In summer, one tree may lose nearly a thousand gallons of water in a single day by evaporation. In winter this amount may be reduced to a few pints or less.

Beside a lake of newly-fallen snow. A British Columbia study by D. Clemson.

LOSING YOURSELF IN THE WOODS

By Ernest A. Dench

HOW deep into the forest can you go?" is one of the "teasers" in examination for a certain forest ranger appointment. A tricky question, as it is meant to be.

"To the other end" is the reply that often first comes to mind. Wrong, though "The middle" is correct. A forest has four ends, and the deepest point of penetration is the middle. Go beyond that and you are coming out at one of the four exits, unless you have lost your way and are travelling in circles.

In one hiking club there used to be a veteran trail leader who loved to scare the tenderfoot visitors. Near the end of a day he would express doubt about getting back to civilization before nightfall and painted a gloomy picture of a night spent in the woods. It was hardly the time and the place for fooling, and we used to think it was bad taste.

On our Sunday trips with organized club groups we have enjoyed approximately 450 hikes ranging from 8 to 15 miles in length and taken between nine in the morning and dusk in all seasons and under a variety of leaders — perfect, so-so, and poor — yet none of them involved an enforced over-night sojourn in the open. The Sunday evening meal was enjoyed either at home or in a restaurant.

It is but fair to state that we had several narrow escapes — if they may be called such — because the leader took the wrong trail or because he had misjudged the distance to be covered in the allotted period of time to make connections with the infrequent train or bus service at the journey's end. But to most of us these uncertain endings have been regarded as delightful adventures.

Out comes the trusty compass, supplemented by several powerful flashlights whisked from sundry knapsacks, and the incident becomes a lark. Why have everything cut and dried when contacting with nature?

This experience leads us to pass along the tip that the woods have no murderous intents for hiking novices if they will take reasonable precautions. They are:—

1. If with an organized group in charge of an efficient leader, do not leave the trail under any conditions. Even if you are lagging behind the main party and there is a cross trail — and the leader has neglected to station a man there until the last one crosses it — stay on the trail. Remain at the junction and call or whistle until you are heard or somebody comes back for you. The party is bound to miss you sooner or later and the leader will not fail you.

2. If on a trail-hike by yourself: Carry a compass. It is simple to use in conjunction with a geographical survey map of the section. Get your direction by having the needle point North, adjusting the direction until the needle so points. Consult the map to find out the village you started from and its direction — whether east, west, or what. Then find its direction in relation to the destination you have in mind.

If you get off the trail and find yourself wandering aimlessly, keep going until you strike a flowing brook or stream. Follow it down. It may be slow work, but it will eventually get you out into farmlands — and the highway will not be very far away.

Carry a powerful flashlight in your knapsack; it is treacherous walking over boulders and through underbrush in the dark.

Above all, don't permit yourself to become panic-stricken when seemingly lost. Calmly reason your position from all angles, coming to a decision after the facts obtainable from a joint study of the map and compass.

Keep the Limelight on the Commission's Plan for Ontario !

AN EDITORIAL

EARLY next year the Ontario Royal Commission on Forestry is expected to present a report that will be examined with keen interest in all parts of Canada. The reputation of the Commission's Chairman, Major-General Howard Kennedy, is so firmly established that any document to which he sets his hand is likely to be exhaustive and plain-spoken.

The history of commissions has one unfortunate aspect which, in the case of the Ontario Royal Commission on Forestry, should set all friends of forestry advancement on the alert. Too frequently the most painstaking and costly effort of a commission receives prompt and noisy acclaim, only to find itself elbowed out of the limelight by new bidders for public attention. Weeks and months pass, and what was yesterday a handsome new charter of social progress becomes a red-taped slumberer in a government file.

This sequence has taken place so often that a great many Canadians have become cynical as to the employment of Commissions, and therefore peruse their reports in a mixed mood of approval and pessimism.

For such reasons, Major-General Kennedy's coming report deserves to be read not only with confidence that the Government of Ontario will promptly implement its recommendations but with a new determination that public opinion must not allow its contents to be crowded off the stage. To make this effective will demand a vigorous and unrelenting popular effort. Indeed it would seem within the orbit of the Commission's own powers that it should request a campaign of public education to acquaint every citizen of Ontario with what the Commission prescribes for the welfare of the public-owned forest lands.

The route-of-march usually fixed for commission reports travels a narrow line to a few Government desks. In the case of Major-General Kennedy's report, the line should be extended into every area and every class of people where progressive ideas and imaginative planning for Ontario's future deserve to be publicized and discussed. Since the Kennedy report undoubtedly will set forth new patterns for placing Ontario's house of forestry in order, the substance of that report should be made known to all of the householders.

If this is done, there is good hope that the Ontario Royal Commission on Forestry will translate its written thoughts into a chain of progressive actions. The Commission's task will be only half complete when the Chairman signs it. Just at that point the obligation comes to tell the people what it means. If this course is followed, it will redound to the credit of the Commission and the government of Ontario.

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OAKS PLANTED TO HONOUR FORESTRY CORPS

STANLEY PARK, Vancouver, was the scene of a tree planting ceremony on November 17th to honour the Canadian Forestry Corps for their wartime service in Britain.

The ceremony was under sponsorship of the British Columbia branch of the Canadian Forestry Association and three oak trees, the gift of the Royal Botanical Gardens, Kew, England were planted.

Following a parade to the park by members of various Cadet organizations, Junior Forest Wardens, Forest Guards, and three floats that depicted the wartime service the Forestry Corps rendered, the groups gathered at the Junior Forest Warden Grove, located near the centre of the park.

Mr. Ralph S. Plant, President of the B.C. Branch of the Canadian Forestry Association, officiated at the ceremony, while Lt.-Commander K. E. Grant, representing the Royal Canadian Navy, Brigadier E. C. Plow, representing the Army, and Air Vice-Marshall J. L. Plant, representing the Air Force, planted the trees. The Very Reverend Dean Cecil Swanson delivered the dedication service and pointed out that the upright growth of young trees was a fine example for the development of Canadian youth.

The Forestry Corps was represented by Colonel E. P. Burchette who had commanded them in Britain. Also in attendance were representatives of the Services and officials of the B.C. branch of the Canadian Forestry Association.

Mr. John L. Noble, past President of this Association, who was Chairman of the ceremony, pointed out that this was possibly the first time in history that the Commanding Officers of the three Services had ever gathered simultaneously to honour another Service Organization in such a ceremony.

Air Vice-Marshall J. L. Plant at the tree-planting ceremony in honour of the Forestry Corps. Forest Guard Lillian Johnson at centre; President Ralph S. Plant at right, and W. F. Myring, Chief Junior Forest Warden at centre rear.

WATER FERTILIZATION FOR BETTER FISHING

PUBLICITY given the results that are credited to the fertilization of water areas has created a great deal of popular interest. Scarcely a day passes that the Department of Fisheries, Ottawa does not receive an enquiry in regard to water fertilizers and how they should be applied in lakes and ponds.

The basic natural food of fishes is plankton, viz., microscopic plants and animals, which float in the upper layers of water. In winter they are few in number because of inadequate sunlight and low temperature. In spring there is a sudden rise in numbers, but with the onset of warm weather they diminish and this supply of basic fish food remains relatively low through the summer.

The poundage of fish that may be produced annually on an acreage basis in lakes and ponds is limited by the quantity of natural fish foods produced, also annually, or, in other words, by the fertility of the lake or pond, in the same way that land crops, including livestock production, is limited by the fertility of the land. If other conditions are satisfactory, lakes and ponds surrounded by fertile land are more productive of fish life than those located in infertile land areas. This is demonstrated by creel censuses taken in eight lakes in a rocky area and in a pond in a fertile farming district. In the eight lakes the creel censuses gave an average annual yield of less than one pound per acre. The annual yield in the pond is consistently high. In 1944 it was between 40 and 41 pounds per acre.

The late Dr. George C. Embody found that coarse vegetation such as pond weeds, cattails, water lilies and the like, cannot be considered anything but weeds in concrete and earthen ponds. "They prevent the warming up of the bottom water which means a retardation of the processes of decomposition and they compete with the micro-algae for nutritive substances. One will receive nowhere full value for the fertilizer applied in a weedy pond."

Any fertilizer applied in any quantity (hit or miss) may not improve but may make conditions worse than they were before, even to the extent of causing the death of the fish previously present.

The minimum information that should precede the fertilizing of lakes and ponds is:

1. A reasonably accurate record (creel census) of the number, weight and condition of the fish that have been caught annually for several years. Such a record will show if there has been an upward or down ward or definite fluctuation in the annual catch or production and the average annual yield. If this record is continued, and assuming that the fishing condition and the fishing effort after fertilization are similar to those that preceded fertilization, the record or creel census will indicate the effect of the fertilization, beneficial or otherwise, in relation to its cost.
2. The elements or kinds of fertilizing materials that are scarce or lacking and the extent to which they should be applied.

ALBERTA'S FORESTS AND WATERS

FOLLOWING are a few excerpts from the September Diary of Major H. S. Roberts, and his assistant, Theodore Roberts, dealing with their public meetings in northern Alberta as staff members of the Canadian Forestry Association:

Entwistle: A slow start here due to rain and bad roads, but our audience was keenly attentive and genuinely interested in forest fire prevention.

Granada: Many people here derive their income from the forests and they want the timberlands protected. Attention was excellent, and many said how concerned they were to have the young people informed about conservation.

Carrot Creek: We talked to sixty-five young men and women here and many thanked us for the information they had received. Ourpictures were warmly appreciated.

Edson High School: We had 150 students in the afternoon and they and their teachers showed us a hearty welcome. It was plainly evident that the people of this area want to know how to keep their natural resources in perpetual production.

Edson Veterans' Hall: 125 of the parents turned out and followed the programme of addresses and pictures with keen attention.

Entrance: Our audience of eighty was good for this small settlement. Many came from a nearby lumber operation. Losses from fire have impressed a vital lesson in this section, and most people want a different deal for the future.

Grande Prairie: Our audiences here totalled 250, and the high school studens especially gave us a vigorous welcome. The pictures and talks brought many invitations to return next year.

The Tree-Planting Car of the Canaidan Forestry Association, which devotes its service to the open prairies and the development of shelter belts is on a two months' tour of Alberta, meeting with a hearty public reception at all points.

THE INDIAN HORNBILL

ONE of the strangest of pairing-offs in the species of hornbill birds, known as the Indian Hornbill. During the period when the female lays the eggs and incubates them, she is taken care of by the male, and it is his responsibility to see that she has food and water.

In order to secure the female against intrusions during this time, the male places the female in a hollow tree and covers the opening with mud, leaving a small opening at the top through which food can be passed to the setting bird.

Not only does the female set on the eggs until they hatch, but she stays with them in the tree hollow until the young birds are almost ready to fly, all the time being fed by the male.

On a winding winter road of North Ontario.
Photo by Northland Photo Service

Little Journeys in the World of Nature

by **JAS. L. BAILLIE, Jr.**
Ornithologist

"No such thing as a vegetable"

ACCORDING to no less an authority than Dr. F. L. Drayton, Dominion Botanist, there is no such thing as a vegetable, botanically speaking. "A vegetable" he states, "is simply a piece of vegetation, and the word has no particular botanical significance."

The question came up in a customs court at Buffalo recently where lawyers were attempting to prove that rhubarb was a fruit rather than a vegetable, and consequently subject to a lower rate of duty.

While of the opinion that rhubarb is not a fruit, — a fruit being the organ of a plant which has resulted from the fertilization of the flower — Dr. Drayton does not enlighten us as to its proper classification. He admits that many common market products, however, are incorrectly classified by dealers and consumers alike. Fruits, according to our Dominion Botanist, include such commodities as tomatoes, peanuts, eggplants, pumpkins and squash, despite popular belief to the contrary.

Common, parlance, in fact, describes inadequately many of our most familiar plants and animals — the Dog-tooth Violet is a true lily, the Nighthawk is anything but a hawk, Horned Toads are typical lizards and the Speckled Trout is a charr, rather than a trout — but familiar names almost invariably become accepted by long usage, no matter how inappropriate, and pumpkins will be "vegetables" despite the edict of the authorities.

Control of the Starling Threat

An effective method of reducing the Starling population in areas where these winged emigrants from Europe are causing damage to fruit and grain crops, has been announced by the Laboratory of Ornithology at Cornell University. Fire-hose, Roman Candles, gassing, trapping, shooting, poisoning, tree-trimming and screening buildings, all reasonably effective control measures, were found to provide only local relief, and the New York scientists set about to devise some control measure that would be effective anywhere.

The control method devised at Cornell is based on an understanding of the birds nesting habits. Boxes were placed out in desirable locations on telegraph poles about ten feet from the ground to cater to the birds' nesting preferences. Some idea of the success attained in a three-year control experiment may be gained from the fact that practically the entire Starling population of a two-mile-square test area in New York accepted the boxes for nidification purposes.

The starling was introduced into North America at New York City in 1890. In Canada it made its first appearance in Ontario in 1914, in Nova Scotia 1915, in Quebec 1917, in Manitoba 1931, and in Alberta, 1934. It has become the most common bird in eastern North America during the past two decades, outnumbering even Robins and English Sparrows.

Dr. Arthur A. Allen, Chief Cornell ornithologist believes that with the great increase in the Starling, it has changed from a beneficial species with insect-eating proclivities to a great menace in many areas, destroying cultivated cereals and fruits and creating a nuisance by concentrating in great numbers to roost on public buildings or in trees in residential sections.

Management of the Starling through control of its nesting population, the report states, is definitely feasible in affected areas. Elsewhere, in dairying and vegetable-growing areas where the Starling is economically beneficial by killing off white grubs, weevils, etc., the nesting boxes serve to attract them. Always, however, the birds are in such a vulnerable position that they can be controlled whenever and wherever desired.

Niagara Falls, Death Trap for Birds

The recent news report that a thousand Blue-bill Ducks (Scaups) had been swept over Horsehoe Falls during a thick fog, brings to mind the fact that at least since the time of first European contact with the great Niagara cataract, it has been a natural hazard to migrating waterfowl.

Whistling Swans have been among the birds killed in varying numbers in spring there for at least two centuries, as Peter Kalm, the Swedish botanist (quoting John Bartram) noted this destruction in his book published in 1751, and during one recent March as many as 200 swans plunged over the cataract while resting on the river above the Falls on their north-westward migration from their wintering areas (Chesapeake Bay, etc.) to their breeding grounds in north-west Canada.

The Niagara River seems to be directly on the spring migration route of these big waterfowl, and, settling to roost on the placid waters above the Falls, they drift with the current until they find themselves in the rapids at the brink of the cataract when it is too late for them to take flight and avoid being precipitated to their injury or death into the river below.

The destruction of swans at the Falls has been reduced of recent years by the Canadian and U.S. governments, who have placed a submerged weir across the river at the point where the birds first drift into the rapids above the Falls.

Radar Plots Bird Flights

The importance of radar in bird detection has been receiving an increasing amount of attention from ornithologists on both sides of the Atlantic, of recent years. On a November night, in 1941, invasion alarms sounded along the Norfolk coast as radar sets reported approaching enemy planes. Crews of patrol vessels and defence guns, however, heard only the honks of flocks of geese flying to their feeding grounds in the Humber estuary. The geese had reflected the radar beams, according to Dr. E. S. Shire, and to operators they seemed like approaching ships and planes.

Great strides were made with radar during the war. One English observer David Lack, plotted the passage of a flock of Graylag Geese flying at a speed of 35 M.P.H. for 57 miles. In the Yellow Sea, off the coast of China, in 1945, an American naval officer, Irven Suss, was able to follow for seven miles on his radar instruments migrating Pintail flying at about 30 knots some 200 feet above the sea. The identification and numbers of the objects were necessarily made by daylight but, once effected, their course and speed of the objects could be readily plotted with precision.

The importance of these observations in future studies of bird migration can readily be imagined.

To Tighten Your Axe Head

by PAUL W. H. G. JOHNSON

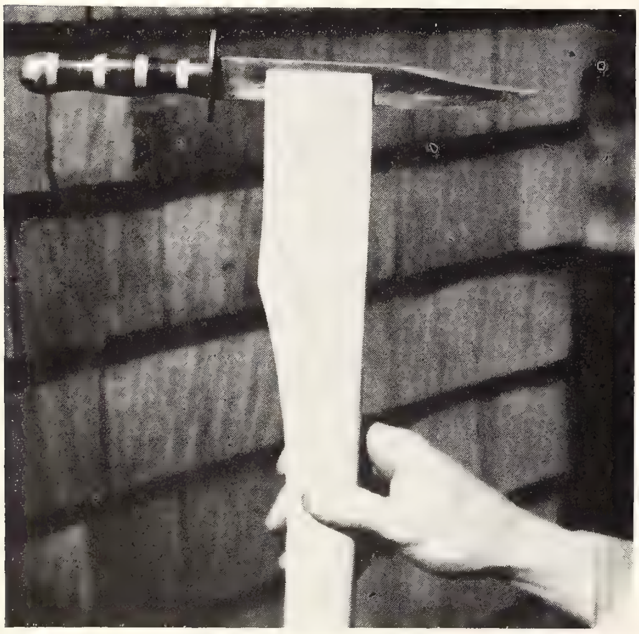
THE camper's axe is an essential piece of his equipment, but is useless and dangerous if the head becomes loose. Unfortunately, the usual cause of loose axe heads is that, in mass production at the factory, they are incorrectly wedged. The end of the handle has had a saw cut made in it to receive the wooden wedge. The end of the handle should have been split, not sawed, because a tapered wedge in a square saw cut will only bind on the top edges and never stay tight. A wedge, driven in a split handle, binds on its entire surface.

Fit your axe handle loosely to the eye of the axe, so that the head is well down to the shaped portion of the handle for correct balance. Let the excess handle protrude through the axe eye. Next, carefully split down the center of the handle, with a wide chisel or knife, for a depth of two inches or so. (Fig. 1.)

Place the head on the handle and make a long tapered wedge. Use a piece of wood about one foot long, and taper it on the end for approximately five inches. Preferably make your wedge of a soft, fine-grained wood, such as old growth Douglas fir or pine, because a soft wood wedge binds better against the hardwood handle. Place the wedge in the split handle and hold the long wedge in your hand, so that the axe head and handle are suspended, while you drive the wedge with a light hammer. Each time you hit the wedge, the axe will jump toward it and the wedge will not break. (Fig.2.) You can wedge a handle so tightly by this method, if care is not taken, the eye of the axe can be split open.

When the head is securely wedged, saw off excess handle and wedge, close to the axe head. A hacksaw is best for this operation, because a closer cut can be made without damage to the saw.

Figure 1



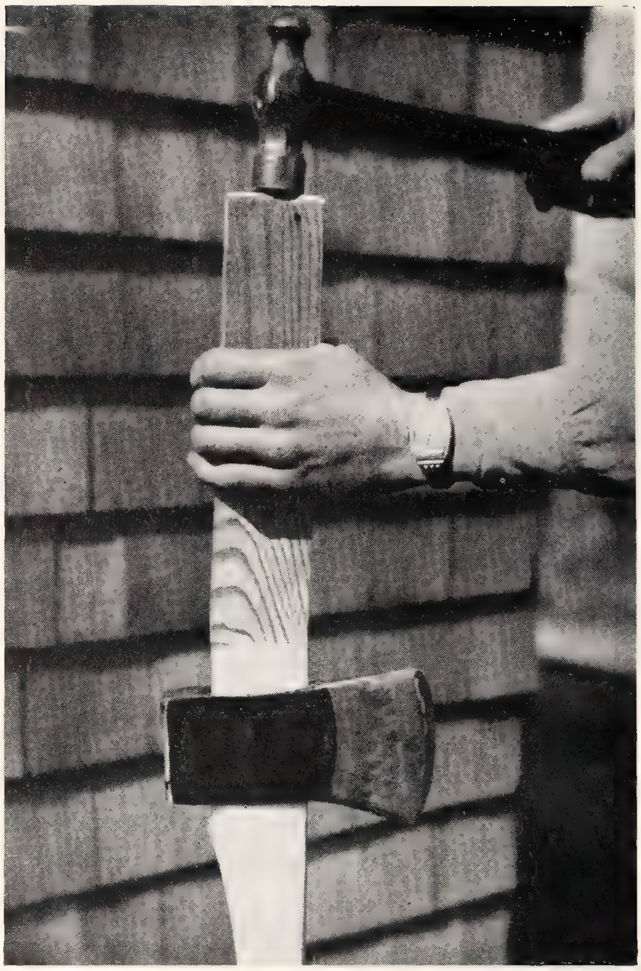


Figure 2

Your axe head is now correctly hung and wedged, but you can doubly insure it's tightness by boring a 3/8 inch hole for a depth of one inch to one and one-half inches down the center of the wedge. Pour raw linseed oil in the hole and keep it full of oil for a few days, until the handle has absorbed sufficient oil. Then plug the hole with a tight wooden dowel. The linseed oil will permeate the handle and prevent the axe handle from swelling and shrinking when it becomes moist, then dry, which action tends to compress the wood grain in the handle and in time will loosen the axe head.

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Q. In a newspaper article was mentioned the common practice of fire insurance on woodlands in Sweden and Norway. Why isn't this available in Canada?

A. Because the public sets too many fires to make the insurance risk reasonable. The Canadian forest fire record, area for area, is 19 times greater than in Sweden. Six-thousand forest fires annually are not compatible with reasonable premiums.

Get out and

PLAY

There are sports for every age and disposition, sports from which every age can benefit. Choose the one which suits you best. Get out and engage in it yourself. Enjoyable as it is to watch others, being a spectator cannot give you the development of body, mind and spirit which comes from personal participation in some form of healthful sporting activity.

MOLSON'S

Why the World Famine in Newsprint?

(Excerpts from an address by Arthur A. Schmon, President Ontario Paper Company, at Continental Hotel, Chicago, Oct. 9 1946)

WHY has newsprint consumption increased? First, because in the more civilized countries populations have increased, people have begun to take a wider interest in domestic and world affairs, newspapers have improved their services and expanded their usefulness, and business operations have reached a much higher level. And second, because literacy throughout the world is on the increase — large populations in Latin America, India and China are now providing new and permanent markets for newsprint. In order to understand the potentialities of these markets, this comparison may be of interest — in the United States there is a newspaper for every three people; in India there is a newspaper for every 200 people.

Why has production decreased? Because of the bombing or the other effects of the war on newsprint mills throughout Europe and, particularly because of the current shortage of coal. Restoration is a slow, difficult and expensive process. In addition, many newsprint mills, particularly in the United States, have either reduced their newsprint capacity, or diverted their production to other more profitable products. Many mills have found that under OPA price restrictions the financial return on newsprint production is either inadequate or below that obtainable in the manufacture of other pulp and paper products.

The effect of this reduction in newsprint capacity, combined with the increase in demand, can be illustrated by quoting the prices that are being paid for newsprint today throughout the world. In the United States under the government ceiling, the price per ton which manufacturers receive for newsprint delivered in New York, is $74. But, in free markets elsewhere, it is a different story. I understand that up to $300 per ton is being bid in China for Russian and Scandinavian newsprint, and up to $175 for Scandinavian shipments to South American countries. Here I might point out that no such prices for overseas shipments are geing charged by Canadian producers who, although not manufacturing under U.S. laws, have individually followed the course of charging a moderate price despite their rapidly mounting costs, and despite the higher prices existing elsewhere.

The world is begging for newsprint, with conditions bordering on starvation in some countries. For example, in Britain newsprint consumption has been restricted to one-fourth of what it was before the war. The Englishman presently has a newspaper averaging only five pages daily. It has been officially estimated that he may, by 1950, get 12 pages — if he's lucky. And he is better off than the Dutchman, for in Holland newsprint consumption is at a lower level than in any democratic country in the world. The few newspapers able to remain in business there publish but a single half sheet daily.

That is an appalling state of affairs. And let us not deceive ourselves, it concerns us all very directly. In a world in which faster transportation and communication facilities have brought Europe and Asia to our backyard, in a world which looks to the United States for leadership, and in a world which must understand the motives of this great and powerful nation, the ignorance which results from an inadequate press in "don't know" nations will, as never before, breed doubt, suspicion and mistrust; for the newspaper is the one great medium of public education everywhere. Without it there is ignorance. We cannot expect the peoples of the world to understand us, much less work with us, if they have no access to knowledge of our affairs, to the free interchange of news and views and some understanding of world affairs. Without newspapers, such understanding is impossible.

And so, basically the newsprint shortage abroad is a matter of intimate concern to us in North America. Indeed, taking the broad view, this situation is quite as important to us as it is to those countries which are starved for newsprint.

If we look back to 1939, we find that of a total world newsprint production of 7,700,000 tons, Canada produced approximately 2,900,000 tons — about 37%. Today, Canadian production has reached a record output of 4,000,000 tons a year. The figures for present world production are not altogether certain, but it is known that Canada's contribution will amount to more than 50% of the world total. more than four times greater than that of any other country. This record will be achieved despite the serious depletion of pulpwood inventories resulting from wartime operations and an acute shortage of woods labour.

Of the total 4 million tons of Canadian production this year, only 6% is being retained for Canadian use. This 6% is far below the Canadian demand. 13% will be shipped to countries abroad. The remaining 81%, more than 3¼ million tons, goes across the border to supply four-fifths of the United States consumption. From this it is apparent that the Canadian newsprint industry is an enterprise of paramount importance to the people of the United States, if only for the reason that they depend upon the industry for four out of every five of their newspaper pages.

United States publishers are Canada's largest newsprint customers and their demands continue to grow. During the past ten years, U.S. production has decreased and Canadian mills have stepped into the breach. Before the war Canada provided 64% of the U.S. supply; today she provides 78%. But the larger Canadian shipments have gone primarily to replace tonnage lost from domestic and Scandinavian sources and, only secondarily, to increase the total amount of available newsprint. So, the net gain to the United States has been small, even though the 1946 shipments from Canada were 1,000,000 tons more than the pre-war level.

To deliver these extra tons to the press rooms, the Canadian newsprint industry has had to contend with innumerable difficulties. It is operating at a higher rate of capacity and producing more tons than ever before, but it is still working under what amounts to wartime handicaps and conditions. With only two-thirds to three-quarters of the normal number of woods workers, it has produced a record pulpwood harvest. This has taken ingenuity. Further, it has cost money. We have to cut in and out of season. We have to use extraordinary methods of getting wood at all. And so, the cost of pulpwood has increased three to four-fold over recent years. But not only in woods operations have costs increased. In every sphere of mill operations, including wages, sharp and substantial increases have occurred.

General-Manager of C.F.A. to be appointed

IN ORDER to expedite the work of administration of the Canadian Forestry Association, which has been rapidly-increasing, the Executive Committee of the Association is arranging the appointment of a General-Manager. One of the beneficial results of this move will be to release the President of the Association, Mr. Robson Black, for a wider range of educational missions, the urgency of which will in future require the larger part of his time.

"EASTERN LAND BIRDS"

FROM the press of Doubleday and Company comes a very welcome volume: Audubon Bird Guide, which deals with Eastern land birds and covers Eastern North America, north of Mexico. The high competence of the author, Richard H. Pough, research associate of the National Audubon Society, and 400 full-colour illustrations by Don Eckelberry, have resulted in a book that is at once an authoritative text and a piece of delightful reading.Canadian readers will find a full treatment given to every Eastern land bird known to Dominion residents under the headings of habits, voice, nest and range. The author has condensed his information while keeping it pleasantly readable. Mr. Eckelberry's pictures in colour are excellent The book may be had through any Canadian bookshop

At Ontario's forest tree seed station at Angus. Seeds are cleaned and stored at a constant temperature of 36 degrees F to prevent chemical action within the seed.

BRIER

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"Canada's Empire"

(*Continued from page 378*)

— but it would be well to secure competent guides who know their glaciers, slides, crevices and general snow conditions. Although a few Canadians indulge in ski-mountaineering, it is most popular with Europeans. Many visitors from Europe come to Canada's national parks with their guides and special equipment to enjoy this type of sport that only mountain terrain can provide. Just a few miles north-west of Lake Louise are excellent ski-mountaineering areas; for example, Mount Balfour in the Waputik group and Snow Dome crowning the Columbia Icefield. The summit of Snow Dome crowning the Columbia Icefield. The summit of Snow Dome is 11,340 feet and in six miles of skiing one loses more than a mile in altitude.

The "Banff Annual Winter Sports" in the Canadian Rockies is among the finest held on the continent. It has drawn some of the most prominent athletes in the world.

The "Queen" of the Canadian Rockies usually opens the winter sports season at the Ice Palace. Among the sports listed on the program are skiing, skating, curling, dog derby, tobogganing and swimming.

Mount Norquay, three-and-a-half miles by motor road from the town of Banff, is the skiing centre during the festivities. In 1937 and 1940 the Dominion Skiing Championships were held at Mount Norquay. Holding skiing championships in the mountains gives Canadians a real opportunity to compete against some of Europe's better skiers under conditions similar to those in the Alps. The great variety of country affords splendid terrain for ski-jumping, cross-country, slalom and downhill running. The eighteen-kilometre cross-country course will test the ability of expert skiers. Probably the two features for skiers are the slalom hill, with a descent of seven to eight hundred feet, and the downhill course with a spectacular drop of nearly three thousand vertical feet in a mile and a half. Ski-jumping provides the greatest attraction for the non-skiing spectator. There are many thrills and spills in this event as the jumpers endeavour to lower existing world records.

For quite a number of visitors, skating holds more allure than skiing. Fancy-skating and speed-skating competitions are held in a great outdoor rink surrounded by "nature's silver sentinels". This environment has inspired many champions to perform skillfully on the blades. The skating rink is also the scene of many ice-frolics — among them, badminton and broomball on skates. There is fun and excitement when ice-canoe races are held. Two contestants while standing on a toboggan must drive with the aid of spiked poles, the full length of the temporary rink and back. Usually the toboggans go sideways instead of forward causing many upsets and creating roars of laughter.

For many visitors no holiday would be complete without a whirl at that ancient game, curling. The gathering of the curling clans at Banff is a very important event. Each winter the annual bonspiel is held and many rinks from all over Canada compete for the coveted trophies offered for competition. These periods of sporting activity and social gaiety are outstanding features of the winter season.

Towards the end of the Winter Sport's programme, interest runs high. Selecting the "Queen of the Canadian Rockies" for the following season is one of the concluding events. Nominees from many cities in Western Canada and the Western States seek the honour of being selected Queen. The winner is crowned at a colorful ceremony and usually receives a valuable gift. This event is truly international. Winners have come from south of the border, as well as from Winnipeg, Calgary, Edmonton, Banff and other Canadian cities.

Jasper National Park in Alberta, Canada's largest national outdoor playground covering an area of 4,200 square miles, is steadily being developed into a fine skiing area. The little town of Jasper, situated in the main valley of the Athabaska, is one of the main bases for skiers wishing to traverse the "Tonquin Valley", the famous Columbia Icefield, and Maligne Lake.

Tonquin Valley has an approximate base level of 6,500 ft. elevation. The depth of snow, usually from three to six feet, offers many easy runs of half a mile in length.

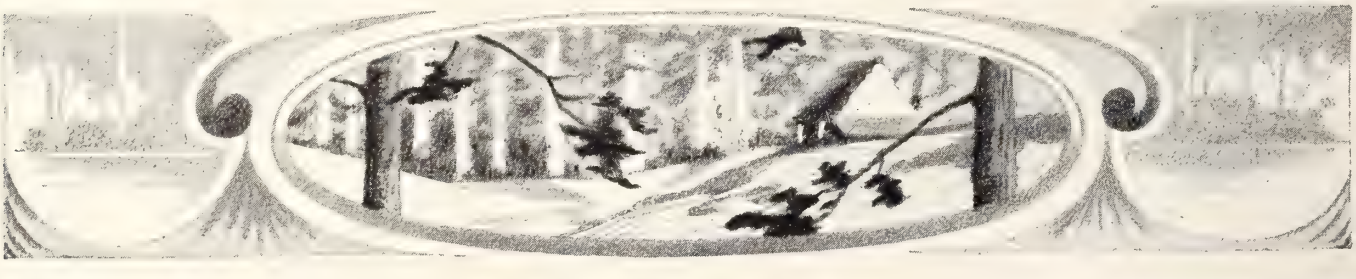
There is considerable ski-mountaineering in the great Columbia Icefield. Although ski-mountaineering is primarily a sport, its importance was highly emphasized during the war. At the conclusion of hostilities it was revealed that a Battalion of Lovat Scouts trained secretly in Banff and Jasper National Parks during the winter of 1943-44. Much of their training took place inthe ice fields. These selected mountaineer troops were trained in skiing, snow craft, camping and winter climbing by instructors chosen by the Canadian Army. Many of these instructors were Canadians.

A unique organization known as "The Alpine Club of Canada", has done much to promote interest in ski-mountaineering. This club was originally formed for mountain climbers, but during recent years many of its members have combined mountain climbing and skiing. The Alpine Club has made several trips over the Athabaska and Saskatchewan Glaciers and many exciting experiences have been recorded during these expeditions.

Maligne Lake is possibly the best developed area for skiing in Jasper. Its accessibility probably accounts for its popularity. Here, over the entire Maligne Range, ski huts have been placed at strategic locations enabling skiers to remain in the higher basins and yet ski from area to area in easy stages.

Revelstoke National Park in the Selkirk Mountains is often referred to as the "Top of the World." It is a mountain-top park situated high in the clouds. The high altitude has given it prominence as a natural winter playground. Many world's ski-jumping records have been extablished and broken on the famous ski jump. The hill is considered by many experts to equal the famous Blumendal hill in Norway. At one meet every world record from boys' to ladies' was smashed.

There may be gold in other hills— but there is health, and pleasure that goes with it in Canada's national parks.



MODERATION

. . . *One of Canada's Finest Assets*

★

IF you have ever watched a squirrel running in a cage, you know how *inflation* works—the faster prices go up, the more money people have to earn to pay them and the higher go the costs that have to be figured into still higher prices. It's a vicious circle.

Fortunately, Canada hasn't been riding that Inflationary Squirrel Cage. The people of Canada have had the common sense to stop and say: "If everybody starts rushing to buy up the things in short supply, all we'll accomplish is to raise prices until nobody can afford to buy anything."

So, we've taken the moderate way—buying only what we really need, spending only what we really have to, knowing that if we wait, we're bound to get more for our money.

Now, all we have to do is to continue to hold fast to what is one of Canada's finest assets—the ability of the Canadian people to be moderate in all things, in their thinking, in their actions and in their habits.

Men who Think of Tomorrow

Practice Moderation Today!

THE HOUSE OF SEAGRAM

The Story of a Paper Page

PAPYRUS, Parchment and Vellum were the writing materials commonly used in the Western World before the introduction of paper. We still retain the terms parchment and vellum to designate certain grades of paper.

Papyrus, a term derived from the Greek, is the name of a reed plant belonging to the family of sedges, unknown to-day but prolific in ancient Egypt where it grew often to a height of ten feet in the immense marshes of Lower Egypt. The papyrus plant was of great economic importance, the bark being made into cordage for sails and the roots used for fuel.

The stem was split into two parts and after the removal of the bark, the pellicles or thin layers of fibres were flaked from the stalk, arranged at right angles in a double layer and pressed together with usually only the Nile water as an adhesive or a thin paste of wheat flour The Egyptians made it up into rolls 10 inches wide of which numbers have been found 40 to 50 feet long. First used to replace sheep's bladder, bones, potsherds, etc. for records in 4000 B.C., papyrus became the chief article of commerce in ancient Egypt. Alexandria with its great University of learning was the centre of the trade.

By the time of Christ, the manufacture had become a monopoly, each sheet had to be marked with a stamp denoting its authenticity and value which is an early example of the use of a "watermark." It is said that the Egyptians were able to finance most of their wars from profits derived from the Papyrus trade. A sheet 10″ x 12″ sold for the equivalent of the modern quarter. It became very popular with the Romans who called both the papyrus and the document written on it — "charta." The size of the sheets seldom exceeded two feet in length. Different names were used to designate the size and quality of the sheets. "Imperial" the largest sheet and also the best quality, was used for letter paper by most prominent Romans.

* * *

Papyrus was imported into Europe up to the 10th Century A.D., and for a long time all diplomatic instruments were written on it on account of its beauty and adaptability of length. However, papyrus was poorly fitted for use in books and was gradually superseded first by parchment and then by paper.

Parchment is the term applied to the skins of animals which have been dressed and prepared for writing. Although parchment, which was common in Ancient Persia and was used by the Ionian Greeks in 500 B.C., is possibly a more ancient writing material than papyrus, it did not come into general use until the 2nd Century B.C. At that time, 190 B.C. Eumines, King of Pergamus endeavoured to found a library which would surpass that of Ptolemy Philadelphus at Alexandria, but in so doing he enraged Ptolemy to such an extent that all export of papyrus to Pergamus was forbidden. Accordingly a substitute had to be perfected and parchment was brought into general use. No doubt the King handed the problem over to his research staff with dire threats of execution if they failed.

Parchment is ordinarily made from sheep, the skin being fleeced, depilated, scraped, polished, treated with lime, stretched and dried. The skins of lambs produced a better grade than sheep and the skins of unborn lambs, known as "virgin parchment" was like vellum in quality. Eumines' famous library was written on goatskin. The durability of parchment increased its popularity and although papyrus was cheaper, parchment was used for more permanent records. By the end of the 7th Century it had replaced papyrus everywhere. The most ancient manuscripts on parchment date back to the 3rd Century.

ANNUAL MEETING

Canadian Forestry Association

Windsor Hotel, Montreal
Monday, February 10th, 1947.
Directors Meeting: 10 a. m.
Directors Luncheon: 12.30 p. m.
Public Business Meeting: 2 p. m.

Parchment was chiefly prepared by monks in abbeys. The great market was in Paris where once a year in the second week in June, a fair was held in the St. Denis plain. The court and universities had first choice to buy up their supply for the year. By the 10th Century, a process of bleaching had been discovered and the parchment was very fine and white unless stained for special purposes, e.g., prayer book parchment was stained black. Parchment was the most common substance of writing in the 13th Century but from then on the quality falls off, until the coming of printing and of paper brought its great days to a close.

* * *

Vellum is a writing medium prepared from the skin of calves and differs from parchment in the delicate nature of the skin, its higher polish and its whiteness and transparency. Vellum was made from the skin of calves not over six weeks old, the younger the calf the finer the grade of vellum; that produced from the skin of a still-born calf being most highly valued. The art of preparing vellum was perfected by the monks during the 10th and 11th Centuries and was a more costly process than that of parchment. Some of the most beautiful manuscripts of the 14th Century were written on vellum. Purple-stained vellum was used for silver lettering and crimson for gold lettering. When used for miniature painting, the surface of the vellum was prepared by rubbing with pumice stone.

Vellum to-day is a term applied to certain types of high grade writing paper made from cellulose fibre. Modern parchment is prepared by treating high grade paper with sulphuric acid which compacts the sheet and hardens the surface. True parchment has practically disappeared from use to day; even the so-called "sheepskins" which Universities present to their students upon graduation, are commonly printed on paper or artificial parchment made from paper.

To-day, paper is manufactured on giant machines running night and day and in the case of newsprint, at speeds up to 1,300 feet per minute. Paper has thus become the universal writing and printing material, available to all at low cost. The development of this tremendous industry in little more than a century has often been described as the romance of paper.

NEW HORIZONS
IN
Canada Unlimited

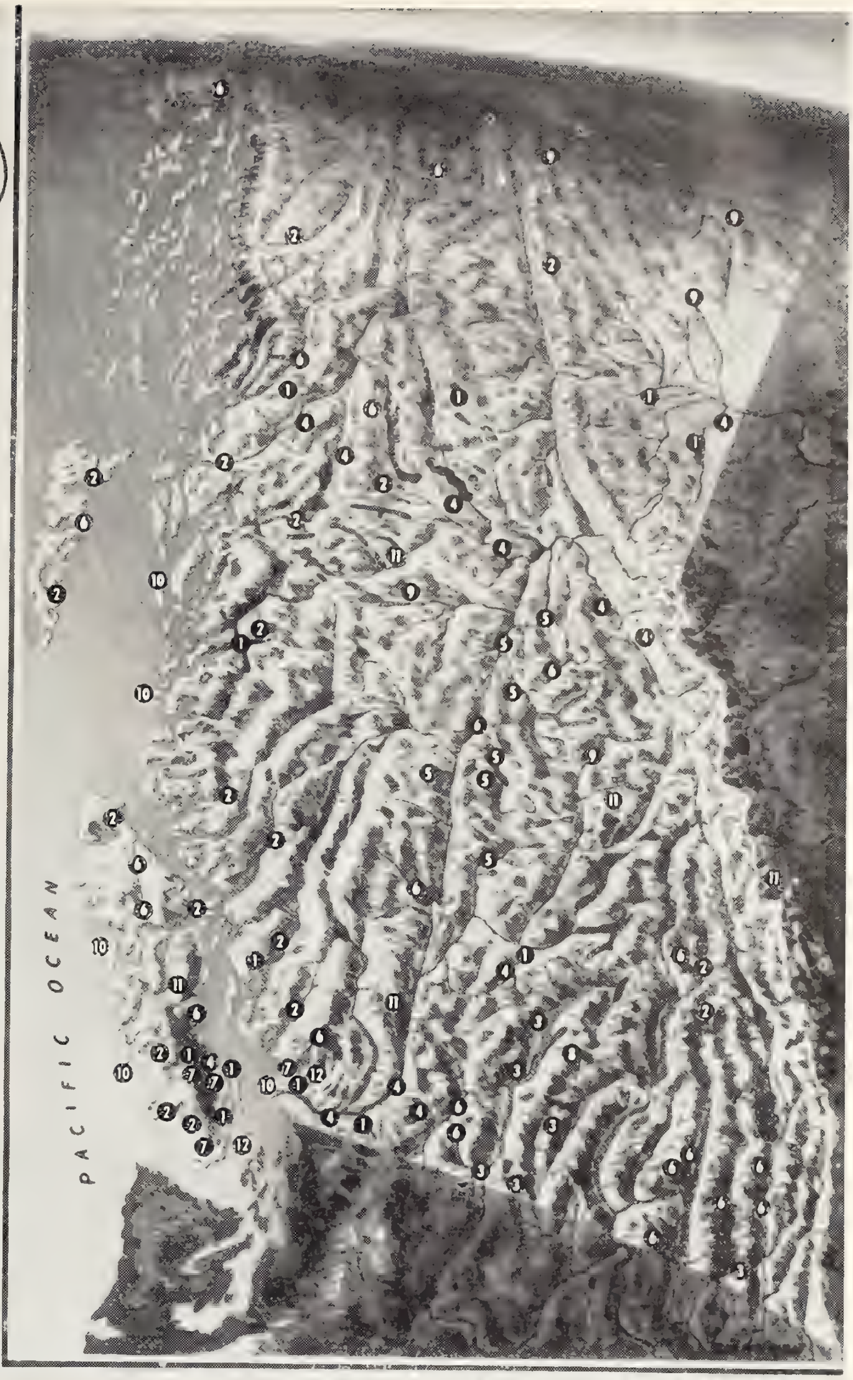
British Columbia

CANADA'S GATEWAY TO THE PACIFIC

- It is less than a normal life span since the steel arteries of the trans-continental railway physically wove British Columbia into the fabric of a forming nation.

Today the deep-sea inlets, forest hinterland and mineral wealth of British Columbia provide the raw material for thriving fishing, lumber, mining, and manufacturing industries. And men of vision guiding the forces of modern industrial development drive ahead to even greater achievements.

British Columbia is part of a rich land with a rich future. The New Horizons in Canada Unlimited offer scope for boundless ambition. Tomorrow belongs to Canada.



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Map Legend

1. Electric Power
2. Lumbering
3. Fruit Farming
4. Mixed Farming
5. Cattle Farming
6. Mining
7. Ship Building
8. Fruit Processing
9. Furs
10. Commercial Fishing
11. Park Areas
12. Manufacturing

Winding through the Gulf Islands of the Straits of Georgia. A C.P.R. steamer on its run from Victoria to Vancouver.

ISLANDS OF THE GULF OF GEORGIA

by C. FRANK STEELE

THOSE many green islands studding the Gulf of Georgia between Vancouver and Victoria have a peculiar charm for prairie folk. They have a great lure for vacationists and "The Coast" is our playground, you know. We interior people flock there in thousands and this is only the beginning for we too love the sea with its ships, its sailormen, its bracing winds. If they are not the Trade Winds we fancy they are and it all adds to the glamor of our trips.

Now all this is not that we love our prairie home less, this sheer delight we have in the spread of valley, forest, waterfront and sea. It is just that we relish a complete change and so we "Follow the Birds to B.C."

Of all the Gulf Islands I have a Shangri-la I call my Island of Dreams. Salt Spring is just that as it nestles green and fresh and quiet in the embracing arms of the sea. There it is, inviting all to come and enjoy the fuller life it has to offer. As my daughter, who spends her summers there in a picturesque old home on Cranberry Road, says, it is "out of this world!" It is out of this world of worry and bustle, contention and selfish striving. On Salt Spring one finds a peace that is healing and new beauties at every turn of its roads and bridle paths. Its sunsets one can never forget as the sun in a burnished sky dips into the sea then vanishes in a halo of glory. And then the cool night comes on.

The boat trip from Vancouver to my Island of Dreams is always pleasant no matter the mood of the weather man. Aboard you will find interesting people, good food and ample sheltered spots from which to view the every changing scene. Always, too, there is a fluttering and noisy escort of gulls. They seem to revel in the sport of diving down to pick up bits of food or scraps they may spot in the foamy waves. There is real competition in that race for food. They seem never to tire in pursuit and follow the ship right into Ganges becoming almost part of the ship's company.

Ganges Harbour is like something out of a Robert Louis Stevenson novel. There is a saltiness about it, a smell of oil and ropes and boats and a wharf that fills up with people at an amazing pace. It is empty save for a few drowsy loafers enjoying the sun one minute, it is stirring with life the next. And beyond the pleasant town one sees forests of Douglas fir, green and quiet with alluring paved roads stretching to important spots on the seventy square miles that make up the island, the largest of the Gulf group.

There are still great trees on the island, trees hoary with age. It was fascinating to a prairie man, the dramatic moments when these straight, towering firs crash to the earth with a force that shakes the ground under you, followed by a stillness not unmixed by sadness.

The air is soft out there, the tempo of life is easy, the folk kind and neighborly. There are fish aplenty in the lakes, thrills on the miles of beaches, and pleasant trails threading their way through deep foliage. One never seems to get a fill of the wild fruit along these trails.

There is a strange stillness at night on Salt Spring Island. And how dark the darkness is to an Albertan accustomed to the open plains with their sweep of moonlight. The "eyes of the wilderness" seem to be peering at you out of the tangle of trees and underbrush yet all the while you know that the meanest thing on the island, perhaps is the small, timid deer.

The days pass all too quickly on this lovely isle. One realizes that the departure time is nearing yet somewhere back of one's mind is the pull to remain, remain indefinitely, in this happy, simple, natural world "far from the madding throng." One is tempted even to look around for an "island to buy" as a friend of mine did, an island close as possible to Salt Spring and friendly Ganges Harbour, which I was told is older than Vancouver itself, and where the famous ship "Hood" once dropped anchor.

But leave one must. Again the wharf and the Mouat Bros. warehouse are stirring with life. The hoarse call of the "Princess Mary" starts folk hurrying to the gangplank. Slowly the boat pulls away from the wharf, there is much waving of hands and handkerchiefs, to some there is a sense of loneliness as one leaves the rail. Then you look up and there like old friends are the white gulls flying bound with you for Vancouver and the world of reality.

Fishermen and Foresters

(*Continued from page 380*)

animously adopted was one asking Forestry Associations to include in their educational programmes the basic principles of fish and game management, conservation and law enforcement, as well as management of the forest itself.

Another, which should assist in having everyone who enters forest areas wear an identification badge or button, was a recommendation that fishing and hunting licenses be in the form of a visible tag or button, which must be worn.

Answering a delegate, who suggested that this would help to identify almost everyone concerned in woods travel, as fire and game wardens and employees of lumber camps all carried identification, the Deputy Minister stated that the badge system could easily be extended to include also every holder of a trapping license, and thus complete the identification circle.

Enforcement and education are the keynotes of the 1947 programme which, under the first heading, recommends: Strict enforcement of all fish and game protective regulations; The elimination of all political interference in these matters; A request to the Attorney General of the Province that severe penalties be imposed on all offenders; A proper interpretation of fish and game laws by wardens; In order to carry out enforcement more efficiently, that each Regional Warden be given an adequate office staff to permit his District Wardens to devote more time to field activities; That the Government appoint additional full time fish and game wardens and that study courses for all regular wardens be established; That the opening and closing dates of fishing and hunting seasons be co-ordinated with those of adjoing States, and of Ontario; That hatchery facilities of the Province be increased, to provide for the systematic distribution of stocks, following biological studies to determine the proper species of game fish for specific waters; That Northern Pike be added to the list of game fish and be given a closed season.

Under the heading of "Education," the Federation recommended: Instruction on the fundamentals of conserving wild life in schools and youth movements; Setting aside one day each year to be known and observed as "Conservation Day,"; That every effort be made to further the work of the Federation by publicity, through the press, motion pictures, radio and other media; The establishment of a school for the training of fishing and hunting guides; That a pamphlet, giving explicit information on fish and game laws and regulations, be provided for distribution with each fishing and hunting license; That the license be in the form of a visible tag or button; That annual fishing and hunting licenses be available for public distribution, at least one month in advance of the opening dates of the seasons; That non-resident licenses be provided with export forms attached; That resident and non-resident angling and hunting licenses shall have attached three separate coupons, for the various types of game or fish taken; That the Federation recommend to Forestry Associations that they include in their educational programmes the basic principles of fish and game management, conservation, and law enforcement, as well as management of the forest itself; That serious study be given to predators — wolves, etc. — together with the question of bounties for their destruction — and — *That the legal export of game fish be limited to one day's legal catch, in its original condition.*

The final resolution, on "Finance", states: Since all of the foregoing resolutions have as their objective better fishing and hunting conditions in the Province of Quebec, the cost of these projects, which will benefit every resident of the Province, should be borne by the Government of the Province of Quebec.

HIGHLIGHTS TO REMEMBER!

EDUCATION: To educate every resident of the Province to the importance of conserving and restoring the valuable fish, game and forest resources of the Province of Quebec, using the press, motion pictures, radio and other publicity media to further the efforts of the Federation;

Encourage instruction on the fundamentals of conserving wild life, in schools and youth movements;

Set aside one day each year, to be known and observed as "Conservation Day.";

Encourage the establishment of schools for the training of fish and game wardens, and hunting and fishing guides;

BIG GRASS MARSH DUCK FACTORY No1
RESTORED AND MANAGED BY DUCKS UNLIMITED

Chief Naturalist B. W. Cartwright near "Ducks Unlimited" cabins at Big Grass Marsh.

HUNTERS' PARADISES

"Ducks Unlimited" has established magnificent duck factories at Many Island Lake, Alberta; Kinistino, Saskatchewan; and Bull Pound Creek, near Hanna, Alberta. These instances testify to the outstanding work of this non-profit organization in developing Canada's wild-duck population.

Smoking Pleasure Unlimited

FOREST & STREAM

PIPE TOBACCO

THE SPORTSMAN'S SMOKE • GOOD FOR CIGARETTES TOO

WOODLOT HAZARDS

FARM Woodlots are Miniature Forests. They yield a goodly share of Ontario's annual crop of wood products. Like the great forests of the north, however, they face a few hazards too.

You see, young trees spend much of their lives "asleep", waiting until the big trees which shade them and compete with their root systems are removed by natural causes or cutting. Only about one-third of the life of the average tree is fast growth; the rest of the time it lives in a retarded state which varies in degree with the circumstances surrounding it.

The ideal farm woodlot is composed of sound, healthy trees with sufficient variety of the more valuable species to supply the owner with the various wood products he may require for use or sale. All ages and sizes are represented, the best woodlot stands being made up of trees of progressive ages from seedlings, saplings and young trees of three, four and five inches in diameter up through the larger diameter classes to mature trees ready for cutting, but with many more young trees than old.

But whatever their age — whatever the species — the trees in a farm woodlot face the same hazards which often defeat the growth to maturity of their forest brothers in the north: exposure, fire and damage by animals.

YOUNG TREES ARE TENDER: Like young people, young trees grow strong and straight in competition when they receive a little thoughtful care. Like young men, young trees cannot stand sudden, heavy work or exposure to weather — they must become hardened to it gradually. The sudden removal of mature, protecting trees by unwise cutting for instance, often permits younger trees to be blown down because their immature root systems are not strong enough or sufficiently well imbedded to resist the strain of their newly exposed positions.

Many good farm woodlot managers follow the practice of allowing tall, thick borders of shrubs and bush to grow along those sides of a woodlot which are exposed to sudden strong winds or storms. These natural windbreaks are as little disturbed as possible when cutting is done so that wind damage within the stand may be avoided.

FIRE CAN BE DANGEROUS: The vast majority of woodlot fires, like forest fires, are the result of human carelessness. Such fires are unnecessary. There are records of well-wooded areas and communities where fires are unknown. There are, unfortunately, similar communities where fires have wiped out forests and buildings and lives with losses running into many thousands of dollars a year because of recurring outbreaks.

The fire danger for farm woodlots can be considered to conform to the fire hazard season prescribed for the northern areas of the province under the Forest Fire Prevention Act of Ontario, i.e., from April 1st to October 15th.

But at all times — when the woods are dry enough to burn — especially in dry spells in the summer, and in the autumn when dried leaves litter the ground — keep fire away from the woodlot. And this is important — at no time burn stubble, dead grass or slash unless plenty of help is kept close at hand and a good wide fire-break has been plowed around the area where the burning is to take place. It should also be made certain that all fire is dead out before ceasing to patrol any burned area — a stiff breeze, combined with a hot sun, next day may fan smoldering turf or stumps into flame so that the woodlot, buildings and the neighbors would again be in danger. If the farm is in a government protected territory, a burning permit must be obtained from the nearest District Forester or ranger. This is compulsory under the Fire Prevention Act.

Portable saw-mills should be constantly and carefully attended. Carelessly operated saw-mills and the careless burning of slash after cutting are serious, all too possible dangers.

GRAZING IS DEADLY: Grazing is the farm woodlots worst enemy. More harmful to woodlots than any other agency is the grazing of cattle. All woodlots should be well-fenced for, if cattle are to browse the seedling growths, particularly the hardwoods, there is no chance for regeneration. As older trees are cut or die out from damage or disease the woodlot peters out because there is no new growth for replacement.

Grazing animals trample the soil down hard so that seeds cannot penetrate easily as in the spongy floor of protected woodlands; rainwater run off the hardened surface instead of soaking down to the roots; light soil powders and blows off in the open stretches while, in heavier soil grasses take root and use up the moisture. Tree roots laid bare of their protective cover of bark, by the trampling hoofs of cattle, become subject to wood-destroying fungi which attack and rot out the trees. Injuries of this nature frequently cause "stagheads"; death to the tops of trees — a condition which is typical of trees in pasturelands.

As grazing continues and more and more light reaches the woodlot floor, grass growth increases in density and becomes thick sod. Few trees are by this time free from disease and all are worthless as timber — the woodlot, as such, has ceased to exist and soon only a few scrubby trees compete with the grass for a miserable existence. The remedy is adequate fencing.

MANAGEMENT DEMONSTRATED: A number of privately owned woodlots in various parts of Ontario have been selected by District Foresters from time to time to illustrate good private woodlot management. These are known as Demonstration Woodlots. Although they are not necessarily ideal woodlots because many were badly handled before being taken over, they are now under what is known as silvicultural management and will improve materially as time goes by. It will require years of work and growth in some cases, however, to establish ideal conditions.

Farmers and landowners who are interested are invited to consult their nearest District Foresters and to observe the demonstration woodlots in their own communities to see for themseves the excellent progress being made. Owners of demonstration woodlots do this before cutting, planting or doing any other improvement work.

Meetings to demonstrate good woodlot management to school children and other interested groups such as Agricultural Societies, County Councils and so forth, are frequently held in demonstration woodlots.

VALUE FOR GAME COVER: Woodlots provide food and cover for game birds and animals. The decrease in wildlife populations in Southern Ontario is largely attributable to the removal of forest cover to too great an extent. If woodlot owners only knew and appreciated

D'J'EVER?

CLANG!
CLANG!
?
RRRRRRR
I ALMOST BUST THAT DARN FENDER!!
EEEEEEEEEEEEEEEEEE
YOU'RE LUCKY IT WASN'T MORE SERIOUS—
I TOLD YOU THAT RUBBISH WOULD CATCH FIRE ONE OF THESE DAYS, JOHN
GREG FLESSEL

D'J'EVER ANGRILY PULL OVER TO THE CURB AT THE SOUND OF THE SHRIEKING SIRENS OF THE FIRE REELS —

AND YOU ALMOST BUST A FENDER TRYING TO GET OUT OF THEIR WAY AS THEY PASS YOU AT 60 MILES AN HOUR—

BUT A FEW MINUTES LATER YOU DISCOVER THAT THE FIRE WAS IN YOUR OWN HOME AND ONLY THE QUICK WORK OF THE FIREMEN AVOIDED A SERIOUS BLAZE.....

D'J'EVER FEEL LIKE THANKING YOUR LUCKY STARS THAT THE FIRE DEPARTMENTS ARE ALWAYS "JOHNNY-ON-THE-SPOT"?

6-28W

DAWES **BLACK HORSE** BREWERY

how much wildlife requires the shelter and food provided only in a natural habitat they would act accordingly. Actually it is good practice to leave undisturbed trees, stumps or deadfall which are being used by birds or animals for nests or dens.

LITERATURE AVAILABLE: A booklet on windbreaks and shelterbelts is available without cost on application to the Department of Lands and Forests. Other booklets are on the subject of tree planting. One booklet "The Farm Woodlot" goes very fully into the subject and discusses the measurement and sale of wood products as well as the production of maple syrup and the growing and sale of Christmas Trees. There is also a pamphlet on cover and food for game birds.

Any farmer or landowner who is interested is requested to feel free to write the Department at any time in regard to what trees are most suitable for planting in the soil common to his community, or as to the planting and management of windbreaks, shelterbelts, uplands, watersheds or any other similar project.

Simply address inquiries to the Department of Lands and Forests, Parliament Building, Toronto.

"The Truth About Those Starlings !"

(*Continued from page 386*)

hopping. Nesting early in the spring, a site is usually chosen in a tree stump, a bird box, or in any convenient crevice on a building. Four to six eggs, greenish-blue in colour, form the usual set and two broods may be reared in one season. The young flock together on leaving the nests, later joining the adults in much larger congregations in late autumn. By the way the old-fashioned term for a large gathering of starlings was "a Numeration".

Principal food of the starling consists of beetles, weevils, the larvae of grassshoppers, cut-worms and the like. It is one of the very few birds which probe freely in the soil in search of insect food and thus is beneficial to the grain grower. It has access to a source of food at present unavailable to native birds of North America and that is why it has become so successfully established over so great an area of Canada and the United States in a comparatively short time.

There is of course another side to this picture, — the birds eat cherries and grapes and thus incur the wrath of orchard and vineyard owners; they oust other birds from habitual nesting places; they roost on city buildings in huge flocks thereby creating a sanitary problem not easily solved; they do at times partake of ripe grain but I have always felt that this is merely part payment for services rendered in unearthing and destroying a multitude of grubs and worms.

That agricultural interests in Russia are keenly alive to the value of the starling may be gathered from the fact that under the initial five year plan of the Soviet Government all possible aid was extended to these birds. Russian children between the ages of twelve and fourteen were each expected to build one starling house annually and all children were taught to feed the birds during winter months. They were everywhere reminded that "Birds are our allies, — they help us to destroy parasites".

Starlings have but few enemies, the sparrow hawk being perhaps most feared. Although not rated high as a table fowl yet a number of these small birds baked in a pie provides a dish that may be relished by King or Commoner. It is almost a certainty that throughout many parts of Europe during the past six years the starling population has been greatly reduced.

In Europe the starlings are not notably migratory but already in Canada there is evidence of the birds moving south at the approach of winter. That they can successfully withstand sub-zero weather has been proved but when the ground is frost-bound a scarcity of food compels the hungry creatures to emigrate. In the neighbourhood of cities the birds then seek sustenance on garbage dumps and by open streams into which sewage is discharged.

In some cities on this continent the starling problem caused many a headache in civic circles. In Washington a vast flock resorted nightly to Pennsylvania Avenue and to the precincts of the White House. Someone advised that these birds roost only on small twigs whereupon city parks employees ruthlessly pruned the boulevard trees. The starlings then flew up and squatted at dusk on ledges of adjoining buildings and defied all efforts of the fire brigade to move them elsewhere. In Philadelphia they favoured the massive and ornate Franklin Institute as a dormitory and presently the handsome new building looked like an old established rookery. In an effort to dislodge and discourage the tens of thousands of birds a steeplejack was employed to smear all the upper ledges of the Institute building with some offensive smelling substance — this despite the fact that birds have practically no sense of smell. Needless to say the experiment was an utter failure.

In that same city the Public Library also formed an hostel for an immense flock of starlings. In addition to badly fouling the exterior of the structure their incessant chatter disturbed patrons of the reading room and some action was called for. The library board borrowed a live horned owl from the local zoo and hung it in a cage on a prominent part of the building. This was expected to scare the starlings into the next county. As a matter of fact it proved a great attraction to all the starlings in the city. They came from far and near to jeer at the captive owl and to chuckle over the simplicity of mankind. In other towns and cities attempts to drive off the birds by the use of smudges, firing of roman candles, beating on tin cans and such like measures proved abortive — in most cases the attempted cure was worse than the disease.

It seems likely that in course of time the starling will have found a home on most of the farms in Canada. It is almost a certainty that the birds are here to stay. Their numbers and welfare will be largely governed by abundance or scarcity of worms and grubs in the soil of stubble fields and amongst the roots of grass. Whatever the urban dweller may think of them is of small concern to the farmer who welcomes the starling as another safeguard to the growing crops.

"Notebook of a Conservationist Abroad"

A well-illustrated brochure bearing the above title is available to readers of Forest and Outdoors at 20 cents per copy postpaid; for orders of 100 or more the price is 10 cents each.

Printed on coated paper and with colour decoration, the brochure is a compilation of seven articles written from Sweden, Norway, Switzerland and England by Robson Black, President of the Canadian Forestry Association. Many of the articles have appeared in this magazine, but readers have asked for a separate printing, and the demand has reached 500 copies for single organizations.

Mail coins or stamps to The Canadian Forestry Association, 1018 Canada Cement Building, Montreal P.Q.

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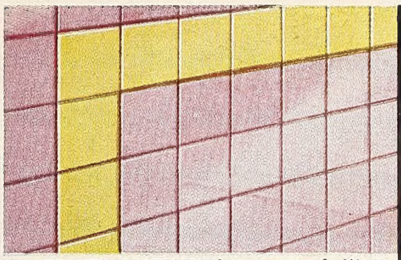

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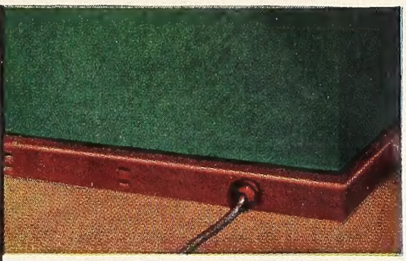

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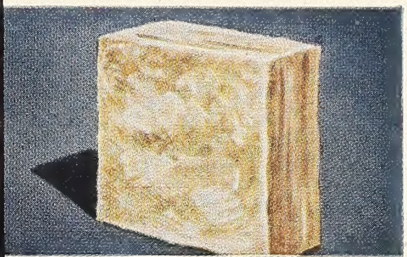

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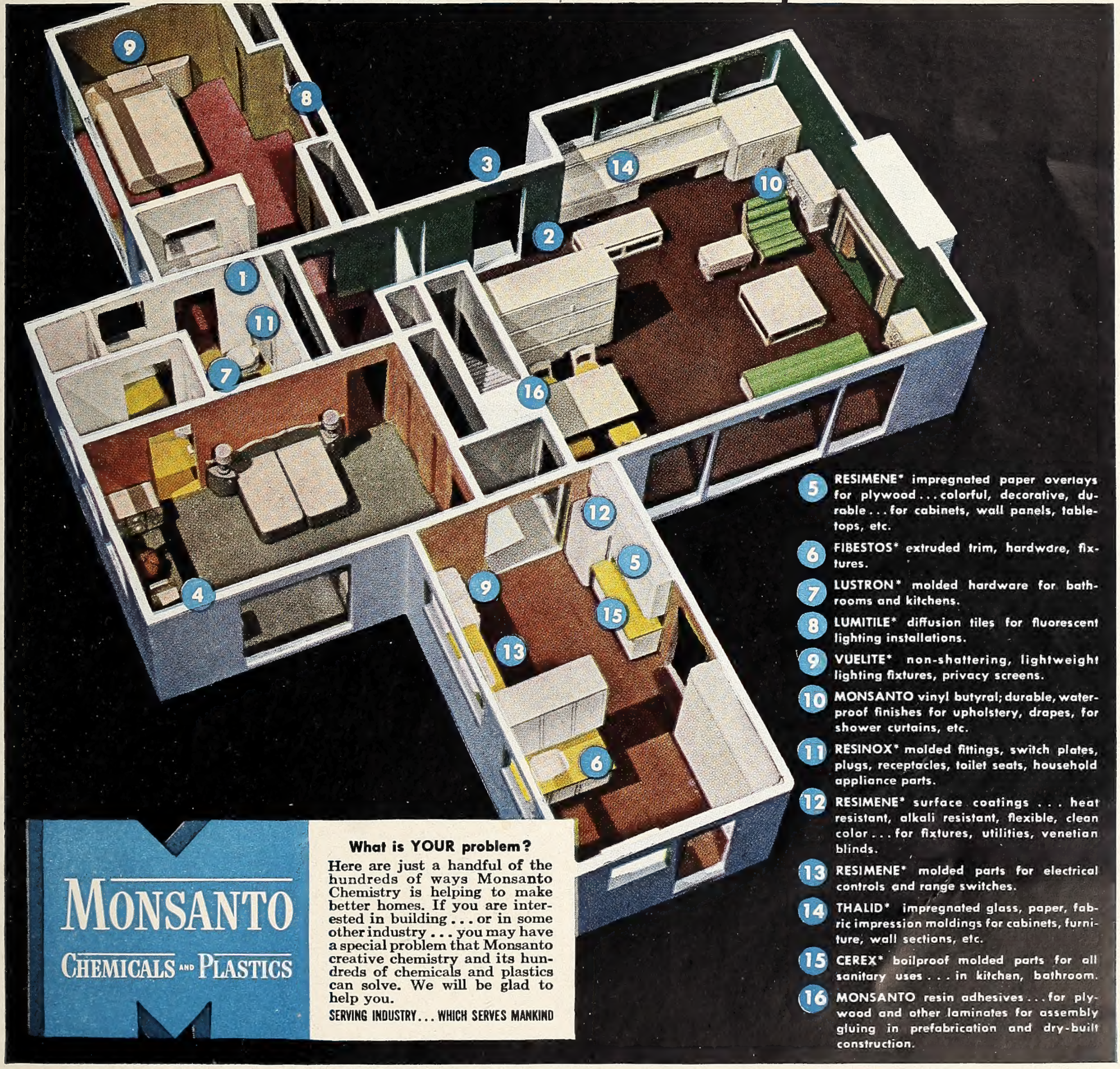

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SERVING INDUSTRY . . . WHICH SERVES MANKIND

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"WHITE-TAILED DEER" *by W. B. Herbert.*
The above illustration shows white-tailed deer at the close of day.

Poised and alert, among the lengthening shadows of a snow crusted bush trail stand a Buck and a Doe. Yet, at the crack of a twig, the white tails vanish into the fastness. Truly a superb example of Canadian wild life whose continued existence in our forests can be ensured through the whole hearted support of conservation measures.

* "As a sportsman, or simply a person interested in enjoying nature, we can help by strictly obeying the regulations designed to protect our game animals."

* An excerpt from—CONSERVATION AND CANADA'S BIG GAME ANIMALS, by S. C. Downing, one in a series of pamphlets published by The Carling Conservation Club.

THE HUNTER
—*a Conservationist*

The hunter, by lawful shooting helps control the number of deer which any given area can support, and by the destruction of predatory wolves, becomes a conservationist of the first order.

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